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RECORDS OF BIG GAME

FOURTH EDITION

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RECORDS OF BIG GAME

RECORDS OF BIG GAME

WITH

THE DISTRIBUTION, CHARACTERISTICS, DIMENSIONS,
WEIGHTS, AND

HORN & TUSK MEASUREMENTS

OF THE DIFFERENT SPECIES

FOURTH EDITION

By ROWLAND WARD, F.Z.S.



LONDON

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GENERAL

Re. A.

TO THE
SPORTSMEN OF THE WORLD
WITHOUT WHOSE ENTERPRISE THESE RECORDS
COULD NOT HAVE BEEN COMPILED
THIS BOOK IS DEDICATED

PREFACE TO FOURTH EDITION

IN this edition the finest known specimens of antlers, horns, tusks, and skins are, so far as possible, recorded. It has been found impracticable in some instances to verify the measurements of trophies in distant parts of the world; and such records must accordingly be taken on the responsibility of their respective owners or those who have been good enough to measure them. It is to be regretted that one pair of hands and a steel-tape are not responsible for the measurements of all the actual "records." One of the many difficulties in connection with compilation of this nature is due to the circumstance that different measurements of the same specimen are often sent; this arising sometimes from the use of a common tape or string, instead of a steel-measure. With the horns of freshly killed hollow-horned ruminants an allowance for shrinkage should be made when comparing with older trophies. An average specimen of an *Ovis ammon* horn, for instance, will frequently shrink half an inch in length and proportionately in girth after it has left the field.

With the *Cervidæ* many difficulties have arisen as to comparison; and I may point out that although length of

antlers is invariably put at the top of the list, other particulars such as *number of tines*, *general symmetry*, *spread*, and *weight of antler*, are in many instances the making of a good trophy. In this edition the measurements of smaller specimens have been omitted.

I have to thank many sportsmen and naturalists all over the world for the help they have afforded, especially Prince Henry of Liechtenstein for the particulars of Continental Red Deer.

In the present volume great care has been taken with regard to the accuracy of the dimensions ; and, considering the number of measurements, it will be readily understood the task attempted has been one of no ordinary difficulty.

ROWLAND WARD.

August 1903.

ABBREVIATIONS AND SIGNS

— Owner's measurements and particulars or other known authority.

♂ Male. ♀ Female. ... Unrecorded.

R, Right horn or antler. L, Left horn or antler.

Measurements are on the outside of the longest horn from base to tip ; with Deer from the bottom edge of burr, or coronet, to the highest tip-point, except when notified to the contrary.

Circumference is at the base ; with Deer above brow-tine ; in the Red Deer and Wapiti group between bez and trez tines.

Length is expressed in inches, when not otherwise stated.

Weights taken in the field should be accepted as approximate, and, unless mentioned, are of adult males.

Heights are in most cases taken at the shoulder of adult males (see p. 488).

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RECORDS OF BIG GAME



Antlers of Male Woodland Reindeer. From a specimen in the British Museum.

REINDEER or CARIBOU (*Rangifer tarandus*).

DISTINGUISHED from all other deer by the presence of antlers in both sexes ; those of males being complex, with the brow-tines palmated and often unsymmetrical, and the bez, or second tine, also generally expanded. The muzzle is entirely covered with hair, the ears and tail are short, the throat has a fringe of long hair, and the coat is very thick and of a nearly uniform clove-brown colour, with some white in the region of the tail, and on the under parts and legs. The false or lateral hoofs are unusually large and spreading ; and there is a patch

of long white hair covering a gland on the hock, but none on the hind cannon-bone. Height at shoulder reaching to 4 feet 10 inches (Newfoundland).

Reindeer inhabit the circumpolar regions of both hemispheres, in Europe including Scandinavia, Lapland, and Northern Russia ; their



Antlers of Male Woodland Reindeer from Nova Scotia.
From a specimen in the British Museum.

southern limit varies from 52° to 54° N. latitude, while they extend to between 80° and 81° northwards.

Several varieties, or local races, of reindeer are recognised. The more important are : (1) the Scandinavian reindeer (*R. tarandus typicus*) of Northern Europe and Asia, which is a rather small animal with moderately expanded antlers ; (2) the Spitzbergen reindeer (*R. tarandus spetzbergensis*), characterised by the peculiar form of the nasal bones of the skull ; (3) the woodland reindeer (*R. tarandus*

caribou) of the forest districts of Arctic America, distinguished by its large bodily size and the short, much-palmated antlers; (4) the Newfoundland reindeer (*R. tarandus terra-novæ*), which is closely allied to



Side view of Antlers of Male Barren-Ground Reindeer. From a specimen in the British Museum.

the last, but with even more complex antlers and some differences in coloration; (5) the Greenland reindeer (*R. tarandus grænlandicus*), which is apparently very similar to the sixth variety; and (6) the barren-ground reindeer (*R. tarandus arcticus*), from the open country north of the forests in America, a very distinct animal, characterised

by its small bodily size, and the great length and simple form of the antlers, in which, except on the brow-tine, there is scarcely any palmaria. Certain other local forms have been named by American naturalists; and the reindeer of Siberia and Nevada Zemlia have



Head of Male Newfoundland Reindeer. From Dr. J. A. Allen.

respectively received names, viz. *R. t. sibiricus* and *R. t. pearsoni*. Reindeer heads are probably some of the most difficult to measure, owing to the different curves the top points frequently present. Females have smaller and lighter antlers than males.

Mr. Abel Chapman, in the *Field*, states that two or three-year-old bucks run between 224 and 280 lbs.; but one big stag was made (perhaps erroneously) to scale over 420 lbs., clean.

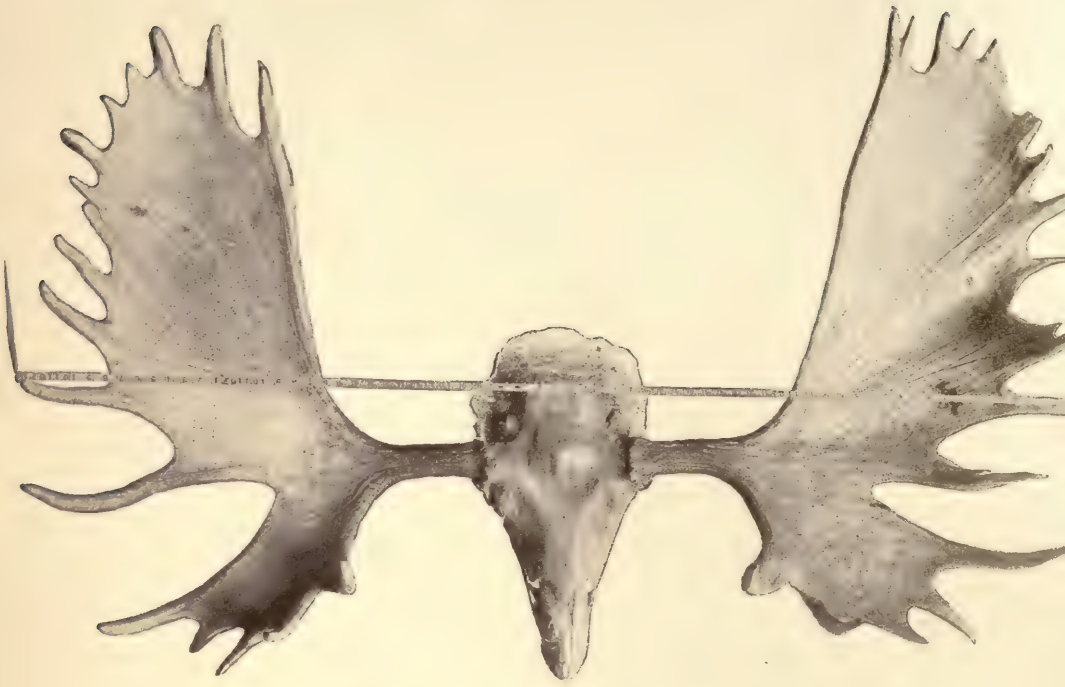
Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
62	5½	40	50½	21 + 17	Canada . . .	Sir Edmund G. Loder, Bart.
57½	5½	13¾	...	13 + 7	Arctic Regions .	British Museum.
57¼	5½	33½	44½ (outside)	20 + 16	Do. . .	Sylvester Browne.
-54½	6	42	50½	22 + 18	Head of Tanana River, Alaska	W. F. Sheard.
-...	6½	...	53	41	Do.	Do.
54¾	4¾	20½	...	11 + 13	N. America . .	British Museum (Sir John Franklin).
-54	6¾	21¼	32¾	12 + 11	?	Paris Museum.
54	6½	29	37	22 + 11	Alaska . . .	Hon. J. C. Lister.
54	4¾	48	52	21 + 14	Canada . . .	D. F. Mackenzie.
53	4½	48¾	54	12 + 11	Labrador . .	Hon. Walter Rothschild.
52½	5½	15	26½	17 + 12	N. Canada . .	J. Talbot Clifton.
-52	6½	35	39¾	20 + 30	?	Imperial Museum, Vienna.
52	4½	28½	38	7 + 7	N. Canada . .	David T. Hanbury.
51¾	4¾	40¾	48¾	17 + 14	Hudson Bay . .	Sir Edmund G. Loder, Bart.
50	5½	27	38	12 + 11	Barren Ground .	A. Barclay Walker.
49	4½	24½	32¾	7 + 9	N. America . .	Hon. Walter Rothschild.
48	6½	11¾	25½	17 + 15	Newfoundland .	Sir Edmund G. Loder, Bart.
47½	6½	40¾	38¾	15 + 14	Itcha Mts., B.C. .	W. Neilson.
46½	6½	16½	28	32	British Columbia .	J. Turner-Turner.
46	4½	24½	31½	15 + 15	Newfoundland .	Capt. H. L. Cottingham.
46	5½	26¾	35	15 + 12	Do. . .	H. Charrington.
45½	5½	31¼	33½	13 + 12	Do. . .	F. C. Williamson.
45½	4½	19¾	31	15 + 13	N. Canada . .	David T. Hanbury.
44½	5¾	20½	26½	10 + 12	Newfoundland .	W. R. Greene.
44¾	5½	34	37	...	Do. . .	C. H. Akroyd.
44	6¾	23½	34	18 + 17	Itcha Mts., B.C. .	W. Neilson.
44	5½	18½	30	18 + 13	Newfoundland .	Admiral Sir William Kennedy.
44	5¾	19	26½	17 + 14	Do. . .	Lieut. A. G. Allgood, R.N.
43¾	5¾	40	41¾	16 + 11	Do. . .	St. George Littledale.
43	5½	21½	29½	10 + 8	Do. . .	Capt. R. H. Morgan.

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Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-42 $\frac{1}{2}$	7 $\frac{1}{4}$	33 $\frac{1}{4}$	38 $\frac{1}{2}$	22 + 18	Newfoundland	R. Gordon Smith.
-42 $\frac{1}{2}$	...	...	49 $\frac{1}{8}$ (outside)	24	Do. . .	General R. L. Dashwood.
42	6 $\frac{1}{2}$	...	18 $\frac{1}{2}$	33	Alaska . . .	Earl of Lonsdale.
42	5 $\frac{1}{2}$	36 $\frac{1}{2}$	39 $\frac{1}{2}$	20 + 12	Newfoundland	Q. C. Colmore.
42	5 $\frac{3}{8}$	38	41 $\frac{1}{2}$	10 + 10	Do. . . .	E. C. Russell.
41	5 $\frac{1}{2}$	20 $\frac{1}{2}$	28	15 + 9	Do. . . .	Lieut.-Col. Hon. W. Coke.
41	6	35	33	20	British Columbia	Lieut.-Col. C. C. Ellis.
41	5	28 $\frac{1}{2}$	32	14 + 17	Newfoundland	S. H. Whitbread.
40 $\frac{3}{4}$	6 $\frac{5}{8}$	32 $\frac{1}{2}$	37	20 + 17	Do. . . .	H.R.H. Prince of Wales.
40	5 $\frac{3}{4}$	19 $\frac{3}{4}$	26	12 + 11	Do. . . .	P. B. Vander-Byl.
40	7 $\frac{1}{2}$	31	38	18 + 19	Do. . . .	F. C. Selous.
40	6	31 $\frac{1}{2}$	35 $\frac{1}{2}$	19 + 14	Do. . . .	Admiral Sir William Kennedy.
39	5 $\frac{5}{8}$	...	23 $\frac{1}{4}$	17 + 14	Do. . . .	Sir Victor Brooke's Collection.
39	6	31	30 $\frac{1}{2}$	15 + 10	Do. . . .	Captain C. E. Stracey.
39	7	28	31	20 + 19	Do. . . .	Admiral Sir William Kennedy.
39	8 $\frac{3}{4}$	18	27	15 + 12	Do. . . .	Capt. G. R. Poole.
39	5 $\frac{1}{4}$	24 $\frac{3}{4}$	32	26 + 20	Do. . . .	W. J. Chapman.
39	7	29	31 $\frac{1}{4}$	18 + 16	?	Duke of Westminster.
39	5 $\frac{3}{4}$	...	...	11 + 11	?	Sir Peter Walker, Bart.
39	4 $\frac{3}{4}$	26	26 $\frac{3}{4}$	15 + 15	Newfoundland	D. F. Moir, R.N.
-39	7 $\frac{5}{8}$	33	31 $\frac{7}{8}$	29 + 22	Do. . . .	Lord Thurlow.
38 $\frac{3}{4}$	5 $\frac{3}{4}$	28 $\frac{1}{2}$	...	18 + 11	Do. . . .	Lord Elphinstone.
38 $\frac{1}{2}$	5 $\frac{1}{2}$	31 $\frac{3}{4}$	33 $\frac{3}{4}$	18 + 11	Do. . . .	F. C. Selous.
38 $\frac{1}{2}$	5 $\frac{1}{2}$	22	28 $\frac{3}{4}$	15 + 11	?	W. O. Bell-Irving.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ 60	5 $\frac{5}{8}$	38 $\frac{5}{8}$	41 $\frac{1}{8}$	22 + 15	?	Sir V. Brooke's Collection.
-59 $\frac{1}{2}$	7	38	44	15 + 16	Norway . . .	J. Whitaker.
-59	4 $\frac{1}{2}$	42 $\frac{1}{2}$	46 (outside)	7 + 5	Do. . . .	H. J. Elwes.
-58	6	30 $\frac{1}{2}$	37	33	Jotunheim, Norway.	S. Ratcliff.
-55 $\frac{1}{8}$	6 $\frac{1}{2}$	38	43 $\frac{1}{8}$	18 + 8	Sundal Fjelds, Nor- way	Capt. Gerard Ferrand.
54 $\frac{1}{2}$	4 $\frac{7}{8}$	33 $\frac{1}{4}$	40 $\frac{3}{4}$	15 + 13	Norway . . .	J. H. Thomas.
54	5	22	41 $\frac{3}{4}$	16 + 11	Do. . . .	Kenneth M'Douall.
-52 $\frac{1}{8}$	5	27	36 $\frac{1}{2}$	26	Norway . . .	Abel Chapman.
-51	6 $\frac{1}{10}$	...	...	...	Rundane, Norway .	Capt. John Marriott.
50 $\frac{3}{8}$	4 $\frac{7}{8}$	24	29 (outside)	16 + 13	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
49	4 $\frac{1}{4}$	25	36 $\frac{1}{2}$	18 + 15	Do. . . .	T. H. Barnard.
47 $\frac{1}{2}$	4 $\frac{1}{2}$	17	27	18 + 14	Do. . . .	A. C. Gathorne Hardy.
47	4 $\frac{3}{8}$	23	29	17 + 9	Do. . . .	Kenneth M'Douall.
46 $\frac{1}{2}$	6	21 $\frac{1}{2}$	26 $\frac{1}{2}$	37	Do. . . .	Hon. Walter Rothschild.
-46	5	29	38	42	Jotunheim, Norway.	S. Ratcliff.
45 $\frac{1}{2}$	4 $\frac{1}{4}$	26 $\frac{1}{4}$	30 $\frac{3}{4}$	12 + 10	Norway . . .	Duke of Bedford.
44 $\frac{1}{4}$	4 $\frac{3}{8}$	34	39 $\frac{1}{2}$	11 + 10	Do. . . .	Rhys Williams.
44	4 $\frac{1}{4}$	20 $\frac{1}{4}$	32 $\frac{1}{2}$	12 + 9	Do. . . .	Col. C. B. Harvey.
41 $\frac{1}{8}$	4 $\frac{3}{4}$	...	24 $\frac{1}{2}$	12 + 9	Spitzbergen . .	W. D. James.
41	4 $\frac{1}{2}$	26 $\frac{1}{2}$	30 $\frac{3}{4}$	12 + 12	Do. . . .	Sir W. Martin Conway.
40	3 $\frac{3}{4}$	31 $\frac{1}{2}$	34 $\frac{1}{2}$	12 + 9	Norway . . .	B. C. L. Burrows.
38 $\frac{3}{4}$	4	25 $\frac{1}{4}$	...	7 + 5	Do. . . .	British Museum.
38	5 $\frac{1}{2}$	21 $\frac{1}{2}$	...	15 + 13	Do. . . .	Do.
37	4 $\frac{1}{4}$	18	20 $\frac{1}{2}$	15 + 11	E. Spitzbergen .	Arnold Pike.
-36	6 $\frac{1}{2}$	34	33 $\frac{1}{2}$	23 + 20	Lapland . . .	Dublin Museum.

¹ Perished antlers.



Skull and Antlers of Male Alaskan Elk.
From an Alaskan specimen in the possession of the Duke of Westminster.

ELK or MOOSE (*Alces machlis*).

Elk are the largest members of the deer tribe, and distinguished by their ungainly form, long limbs, broad, produced, and flabby muzzle (all of which, except a small triangular patch below the nostrils, is covered with hair), the presence of a pendulous hairy organ (the so-called "bell") on the throat of the males, and the form and position of the antlers in that sex. These latter are set on the skull with their bases at right angles to the middle line of the face, and have neither brow- nor bez-tines. In the common species they expand after a short distance into a broad palmation, carrying a number of snags on the outer border. In young elk each antler is divided in a fork-like manner into a small front and a larger hind portion. The main hoofs are long and pointed, and the lateral pair large: there is a gland and tuft of hair both on the hock and hind cannon-bone, the latter being situated high up.

The tail is very short. From birth to old age elk are uniformly coloured ; the general tint of the hair, which is long, coarse, and somewhat brittle, varying from yellowish gray to deep blackish brown, and being usually darker in American than in European examples. The height varies from 5 feet 9 inches at the shoulder in Scandinavian examples to as much as 6 feet 6 inches or, it is said, even 8 feet in American specimens ; the weight from 900 to 1400 lbs., that of the antlers being about 60 lbs.

The elk inhabits the forests and marshy districts of Scandinavia,



Antlers of Common Elk.

Eastern and Northern Russia, and the Altai, and in America (where it is invariably known as moose) at the present time is found in Alaska, Montana, Nova Scotia, and New Brunswick. The European and American elk are so similar that they do not seem worthy of being regarded as more than local races ; a third race inhabits Alaska. Scandinavian elk not unfrequently show little or no palmation of the antlers, and thus approximate to the East Siberian form.

An elk killed at Meswicz, Lithuania, by Count Scheibler, had the following dimensions :—

RECORDS OF BIG GAME

Length tip of nose to root of tail	Feet. 8	Inches. 6
Height at withers	5	9
" " quarters	6	5½
Round neck near the ears	4	9
Estimated weight 1500 lbs.		

A.—American and Alaskan Races.

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
-78½	49	...	...	18	40	Yukon . .	W. F. Sheard.
-76	43	...	...	...	26 + 21	Alaska . .	A. S. Reid.
-74	...	...	...	...	...	Do. . .	American Museum of Natural History.
-73½	...	...	...	23	24 + 14.	Do. . .	C. F. Periolot.
72	47½	9½	37½	16½	20 + 17	Do. . .	Duke of Westminster.
-71½	49	8½	...	16	20 + 20	Do. . .	Sir Edmund G. Loder, Bart.
¹ -70½	55½	7½	...	29 ?	...	Do. . .	W. W. Hart.
-69	55	11 ?	37	21	21	Do. . .	F. B. Tolhurst.
² -69	48	10	...	15	32	Do. . .	Dall De Weese.
-67	...	...	...	...	23	Do. . .	J. H. Whitehouse.
66	44½	10½	49½	14	17 + 14	Kenai Mts. .	Viscount Powerscourt.
-66	38½	9½	44	14	28	New Brunswick	S. Decatur.
-65	41	...	...	24	14 + 13	Manitoba . .	Otho Shaw.
-64½	47½	8½	45½	15½	31	?	Grahamstown Museum.
64	47	8½	40	13	16 + 16	Alaska . .	W. H. Welsh.
63½	45	9	41	15	15 + 13	Do. . .	David Davies.
-62¾	...	...	...	18	20 + 12	New Brunswick	N. T. de Pauw.
62½	...	...	...	...	...	Alaska . .	C. G. Cowan.
-61½	44	...	...	...	...	Canada . .	General R. L. Dashwood.
-61	38	11 ?	50	14	26	New Brunswick	J. Bodkin.
60	40	8	38	13	11 + 10	Canada . .	Viscount Powerscourt.
59½	38	6½	...	9½	11 + 11	?	H.R.H. the Duke of Saxe-Coburg and Gotha.

¹ Height at shoulder, 8 ft. 2 in. ?; skull horns, 68 lbs. ; estimated weight, 2600 lbs.² Height at shoulder stated to be 7 ft. 8 in. ?

ELK OR MOOSE

11

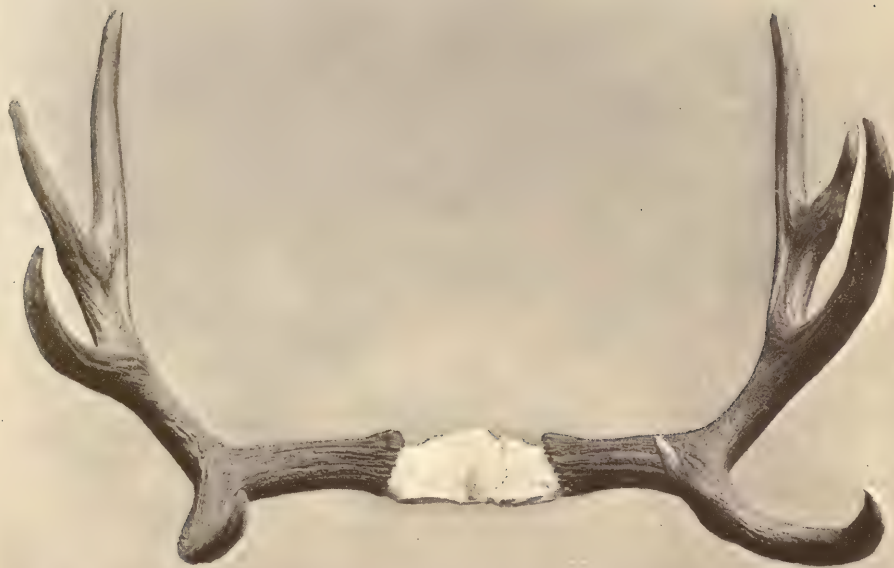
Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
59 $\frac{1}{4}$	43 $\frac{1}{4}$	8 $\frac{1}{2}$	40	14 $\frac{1}{2}$	14+13	Manitoba .	G. H. M. Banks.
58 $\frac{1}{2}$	38	8 $\frac{1}{2}$	39	11	12+11	?	W. Moat.
57 $\frac{3}{4}$	37 $\frac{3}{4}$	8	35 $\frac{3}{8}$	11 $\frac{1}{2}$	11+13	Canada .	Thomas Bate.
57 $\frac{1}{2}$	38	8	21 $\frac{1}{2}$	14	18+15	Do. .	C. H. Akroyd.
57 $\frac{1}{8}$	40 $\frac{1}{2}$	8	35	13 $\frac{1}{4}$	12+11	Maine .	J. S. Braithwaite.
57	45	8 $\frac{1}{4}$	38	13 $\frac{1}{2}$	10+9	Alaska .	Hon. J. C. Lister.
57	39	8 $\frac{1}{4}$	38 $\frac{1}{2}$	12 $\frac{1}{2}$	15+12	N. America .	Sir Edmund G. Loder, Bt.
56 $\frac{1}{2}$	39 $\frac{1}{2}$	7 $\frac{3}{4}$	37	13 $\frac{1}{2}$	14+11	Do. .	Sir Peter Walker, Bart.
-56	42 $\frac{3}{4}$	10	35 $\frac{3}{4}$	13 $\frac{1}{4}$	12+11	Do. .	T. W. Wood, Jun.
54 $\frac{1}{2}$	39 $\frac{1}{2}$	7	38	16	13+12	Canada .	Sylvester Browne.
-54 $\frac{1}{2}$	41	...	...	...	12+11	Do. .	General R. L. Dashwood.
54 $\frac{1}{2}$	40 $\frac{1}{2}$	7 $\frac{1}{2}$	35	13	9+9	New Brunswick	A. C. Bell.
54	36 $\frac{1}{2}$	8	43 $\frac{1}{2}$	7 $\frac{1}{4}$	9+9	Manitoba .	T. P. Kempson.
54	36 $\frac{1}{2}$	6 $\frac{1}{2}$	41	5 $\frac{1}{2}$	7+6	Wyoming?	Capt. The Hon. A. Stourton.
53 $\frac{1}{2}$	41	9	28 $\frac{1}{2}$	13 $\frac{1}{4}$	15+14	Canada .	H. R. H. Prince of Wales.
53	37	7 $\frac{1}{2}$	33	12	16+15	Montana .	T. P. Kempson.
52 $\frac{7}{8}$	38 $\frac{1}{2}$	7	...	10 $\frac{7}{8}$	11+10	N. America	British Museum
¹ -50 $\frac{1}{4}$	39	8 $\frac{1}{4}$	35	19 $\frac{1}{4}$	18+14	?	Imperial Museum, Vienna.

¹ Inside.

B.—European Race.

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
-52	32	7	...	9	9+9	Norway . .	H. J. Elwes.
-51 $\frac{3}{4}$	33	8 $\frac{1}{2}$	36 $\frac{1}{4}$	15 $\frac{1}{4}$	10+10	Do. . .	Capt. Gerard Ferrand.
48	32	8 $\frac{3}{4}$	37 $\frac{1}{2}$	11 $\frac{1}{2}$	10+9	Nr. St. Petersburg	Prince E. Demidoff.
47	28	6 $\frac{1}{4}$	32	9	8+8	Norway . .	Sir H. Pottinger, Bart.
-46	32 $\frac{1}{2}$	7 $\frac{1}{2}$	33	11 $\frac{1}{2}$	10+10	Sweden . .	Capt. Gerard Ferrand.
¹ 46	30 $\frac{3}{4}$	6 $\frac{1}{2}$	43	10 $\frac{1}{2}$	15	Norway . .	Abel Chapman.
-45	31	7	28	...	17	Do. . .	S. Ratcliff.
44 $\frac{1}{4}$	30 $\frac{1}{8}$	7 $\frac{1}{8}$	29 $\frac{1}{2}$	10	9+8	Do. . .	Sir Victor Brooke's Collection.
44 $\frac{1}{4}$	30 $\frac{1}{4}$	...	40	8 $\frac{3}{4}$	17	Do. . .	Thomas Bate.
43 $\frac{1}{2}$	29	7 $\frac{1}{2}$	...	10 $\frac{1}{2}$	24	Do. . .	Sir Peter Walker, Bart.
43 $\frac{1}{2}$	27	6 $\frac{1}{2}$	40	...	8+7	Do. . .	J. H. Barnard.
43 $\frac{3}{8}$	32	6	...	9 $\frac{1}{2}$	7+8	Russia . .	British Museum (Sir Edward Caley).
-43 $\frac{1}{4}$	28 $\frac{1}{2}$	6	33 $\frac{1}{4}$	11	12+10	Lithuania .	Prince Radziwill.
42 $\frac{1}{2}$	29	6	30 $\frac{1}{2}$	7 $\frac{1}{2}$	11+9	Norway . .	Sir H. Pottinger, Bart.
42 $\frac{1}{2}$	26	6	27 $\frac{1}{4}$	7	7+6	Do. . .	Lord Delamere.
42	28 $\frac{1}{2}$	7 $\frac{1}{2}$	24 $\frac{3}{8}$	9 $\frac{1}{2}$	10+9	Do. . .	Sir H. Pottinger, Bart.
-42	...	...	...	...	16	Do. . .	Sir H. Seton-Karr.

¹ Estimated weight, 1260 lbs.



Antlers of East Siberian Elk. From the Hon. Walter Rothschild's specimen.

EAST SIBERIAN ELK (*Alces bedfordiæ*).

A species, or race, distinguished from the typical form of the Scandinavian elk by the absence of palmation in the antlers, which usually have five large tines on each side. Some antlers from East Siberia show a slight tendency to palmation, but no specimens from that area have hitherto been received showing the full palmation characteristic of so many European, and apparently all American, examples. This elk would appear to be the ancestral form of the group. If it be regarded as a race, rather than a specimen, it should be called *A. machlis bedfordiæ*.

Greatest Width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Points.	Locality.	Owner.
42½	30½	7½	28	6+5	Siberia . .	Hon. Walter Rothschild.
39½	26½	8	37	4+3	Do. . .	British Museum.
37½	31¾	8	32	5+4	Do. . .	Hon. Walter Rothschild.



Antlers of Eastern Red Deer. From a Hungarian specimen in the collection of Viscount Powerscourt. Counting from the skull upwards, the first tine is the brow, the second the bez, and the third the trez, above which come the surroyals, or crown. The main shaft is termed the beam.

RED DEER (*Cervus elaphus*).

The red deer of Western Europe is the typical representative of the genus *Cervus*, in which the antlers of the males are set on the skull at an oblique angle to the middle line of the forehead, and always have a brow-tine, while they are generally more or less nearly cylindrical, although sometimes palmated. There is always a large bare portion on the muzzle, the face is long, the ears are generally large, and the tail is comparatively short, often extremely so. Although there is almost always a gland and tuft on the hind cannon-bone, usually situated high up, there is none on the hock itself. The coat may be spotted.

In the red deer the antlers are subcylindrical and complex, generally with a bez-tine, and always with a trez, the number of points exceeding five, and the crown frequently forming a cup. The tail is relatively long and pointed, and there is a distinct light-coloured patch on the buttocks, which includes the tail, although in the summer coat the tail itself is dark-coloured. The general colour of the adult

summer coat is reddish brown, and that of the winter dress grayish brown, while the young are profusely spotted.

Red deer, in the widest sense of the term, are inhabitants of Europe, North Africa, Asia Minor, and Northern Persia. In the typical red deer (*C. elaphus typicus*) of Western, Northern, and Central Europe, the antlers attain their maximum degree of complexity, sometimes having twenty or even more points, although in many Scotch examples the bez tine is wanting. In a red deer killed at Spetchley Park the weight was 419 lbs. gross, and 216 when cleaned; while in one shot at Knowsley many years ago the clean weight was no less than 424 lbs. The height at the shoulder now reaches about 4 feet. H.R.H. the Duke of Braganza saw a continental stag shot which scaled 584 lbs., and shot a 10-pointer with a spread of 55 inches.

The Corsican red deer (*C. elaphus corsicanus*), of Corsica and Sardinia, is a very small race, with the bez-tine of the antlers wanting, and the general colour of the upper-parts dark brown in summer and blackish in winter. Nearly allied is the North African red deer (*C. elaphus barbarus*), which is of rather larger dimensions, with a grayish-brown streak down the middle of the back, and small irregular whitish spots on the flanks and sometimes on the back; traces of such spots being occasionally observable in the summer coat of hinds of the typical race. The bez-tine seems to be very generally wanting.

The Eastern red deer (*C. elaphus maral*) is a large race, described on page 39.

Lord Tweedmouth furnished the following dimensions of a fine Scotch stag, shot, October 9, 1880:—

Widest span over all, $39\frac{1}{4}$ inches; span inside below cups, 34 inches; span outside below cups, 37 inches.

Right antler.—Length, 39 inches; length of brow, $10\frac{1}{4}$ inches; of bez, 10 inches; of trez, 13 inches. Length of tines in cup, 10, 7, $4\frac{1}{4}$ inches. Circumference at coronet, $8\frac{1}{2}$ inches; between bez and trez, $7\frac{1}{4}$ inches; above trez, 6 inches.

Left antler.—Length, 38 inches; of brow, 10 inches; of bez, 8 inches; of trez, 11 inches. Length of tines in cup, 8, 6, and 4 inches. Circumference at coronet, 9 inches; between bez and trez, $7\frac{1}{2}$ inches; above tray, $6\frac{1}{4}$ inches.

Weight, 303 lbs., clean; but stag was much run.



From a Photograph by Whyte.

Antlers of Red Deer killed by Lord Burton, with fully developed cups.

a.—Scotch Specimens.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. lbs.	Locality.	Owner.
-41	7	22½	35	...	7+7	...	Inverness (1794)	Col. W. H. Walker.
¹ -40	6	...	30	...	10	203	Glenilt	Duke of Atholl.
-39	7½	...	34	39½	6+6	303	Guisachan	Lord Tweedmouth.
-37½	...	20¾	26½	...	7+7	...	?	Sir Humphrey de Trafford, Bart.
37½	5½	14¾	26½	...	6+7	...	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
¹ -36½	...	...	35	12	...	...	Glenmoriston	Col. W. Gordon-Cumming.
36½	5	34	39½	41	5+6	...	Glenstrath- farrar	Viscount Powerscourt (shot by the late Roualeyn Gordon-Cumming).
36½	6½	31½	32½	...	6+6	...	?	Sir Humphrey de Trafford, Bart.
36½	7	22¾	28	...	7+7	...	?	Do.
36	5½	16½	28	36	7+7	...	?	Duke of Portland.

¹ Recorded by J. G. Millais.

SCOTCH RED DEER

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Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight. lbs.	Locality.	Owner.
36	4 $\frac{1}{4}$	21 $\frac{1}{2}$	27	...	6+6	...	Caenlochan .	Mrs. Henry Tate.
35 $\frac{1}{2}$	5 $\frac{1}{2}$	...	25 $\frac{1}{2}$	...	6+6	244	Sutherland .	Abel Chapman.
35 $\frac{1}{2}$	6	...	...	29	12	19	Auchnashe- lach	The late Lord Alexander Paget.
35 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	30	...	5+6	244	Glenisla, For- farshire	Viscount Powerscourt.
-35 $\frac{1}{2}$	7	...	26 $\frac{1}{2}$	...	20	...	Glenquoich .	Lord Burton. (See illus- tration.)
35 $\frac{1}{2}$	4 $\frac{3}{4}$	27 $\frac{1}{2}$	34	36 $\frac{3}{8}$	4+3	...	Caenlochan .	The late Henry Tate.
-35 $\frac{1}{4}$	4 $\frac{7}{8}$	31 $\frac{7}{8}$	30	...	6+6	...	Deanich, Ross- shire	G. Percy V. Aylmer.
35	4 $\frac{3}{4}$	22	28	...	7+6	...	Talladh-a-Bhe- ithe, Rannoch	E. Weller-Poley.
-35	...	...	...	34	10	225	N. Morar .	Major T. W. Gill.
-35	...	...	29	41 $\frac{1}{2}$	7+6	...	?	Sir Arthur Grant, Bart.
¹ -35	5 $\frac{3}{4}$	26	33 $\frac{1}{2}$	37 $\frac{1}{2}$	12	...	Guisachan .	Lord Tweedmouth.
² -35	4 $\frac{1}{2}$	...	...	27 $\frac{1}{2}$	8	...	Cairn Thomais Gaick	John Hargreaves.
-34 $\frac{3}{4}$	...	...	...	31 $\frac{1}{2}$	3+2	236	Cluanie .	Hon. T. A. Brassey.
34 $\frac{1}{2}$	5 $\frac{1}{2}$	18	26 $\frac{1}{4}$	34	6+5	...	?	W. Brodrick Cloete.
34 $\frac{1}{2}$	5 $\frac{1}{4}$	37 $\frac{1}{2}$	34 $\frac{1}{2}$	...	12	...	Braemore .	Sir John Fowler, Bart.
34 $\frac{1}{2}$	4 $\frac{1}{4}$	18 $\frac{1}{4}$	27	...	6+5	...	N. Morar .	J. R. Hutchison.
² -34 $\frac{1}{2}$	5	...	...	34 $\frac{1}{2}$	12	231 (clean)	Glentilt .	Duke of Atholl.
34 $\frac{1}{2}$	6	17 $\frac{3}{4}$	25	31 $\frac{1}{4}$	5+4	222	Caenlochan .	Mrs. Henry Tate.
34 $\frac{1}{4}$	4 $\frac{1}{8}$	16 $\frac{1}{4}$	24 $\frac{3}{8}$	...	5+5	...	Auchnasheen	F. Devas.
34 $\frac{1}{4}$	4 $\frac{5}{8}$	22	28 $\frac{1}{2}$	31 $\frac{5}{8}$	6+4	204	Cluanie .	St. George Littledale.
34	4 $\frac{1}{8}$	17 $\frac{1}{4}$	26 $\frac{3}{4}$	29	5+4	...	Caenlochan .	W. A. L. Fletcher.
34	...	...	30	...	11	240	N. Morar .	Capt. T. W. Gill.
34	4	28 $\frac{1}{2}$	30 $\frac{3}{4}$	...	5+4	...	Glenmuick .	Capt. J. Ponsonby.
34	4 $\frac{1}{4}$	12	23 $\frac{1}{2}$	...	5+4	...	?	C. A. Grenfell.
34	4	16 $\frac{3}{8}$	...	...	5+4	...	Blair-Atholl	Major A. W. E. Count Gleichen.
-34	4 $\frac{3}{8}$	19	28	...	6+5	...	Rothiemurchus, Inverness	A. Basil Brooke.
² -34	...	...	...	...	11	...	Braemar .	Col. Gordon-Cumming.
² -34	4 $\frac{3}{4}$	...	...	36 $\frac{1}{2}$	12	...	Glenbruar, Perthshire	Sir W. Ogilvie Dalglish.
² -34	4 $\frac{7}{8}$	...	...	30	10	...	Morar .	W. Stirling.
² 34	7	...	...	26	14	...	Glenartney .	Earl of Ancaster.

¹ Above trez.² Recorded by J. G. Millais.

C

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight. lbs.	Locality.	Owner.
33 $\frac{3}{4}$	5 $\frac{1}{2}$	19 $\frac{1}{2}$	25 $\frac{1}{2}$	..	5+5	...	?	H. S. O'Brien.
-33 $\frac{1}{2}$	5	...	34 $\frac{1}{2}$	...	5+5	280	Dalness	J. G. Millais.
33 $\frac{1}{2}$	4	16 $\frac{1}{2}$	25	29	5+5	...	Caenlochan	H. C. Pilkington.
33 $\frac{1}{2}$	4	23 $\frac{1}{4}$	28	30 $\frac{1}{2}$	4+4	...	Glencarron	H. R. Pape.
33 $\frac{1}{2}$	4 $\frac{5}{8}$	20 $\frac{1}{4}$	28	...	...	...	Glenmuick	Hon. A. Borthwick.
33 $\frac{1}{2}$	4 $\frac{1}{2}$	...	27	...	12	...	Kintail	Sir Edmund G. Loder, Bart.
-33 $\frac{1}{2}$	4 $\frac{3}{4}$	...	36	...	10	280	Jura	Lord George Campbell.
33	4 $\frac{1}{8}$	8 $\frac{1}{8}$	20 $\frac{3}{4}$	24 $\frac{3}{4}$	4+4	...	Ben Alder	Julius Wernher.
33	4 $\frac{1}{4}$	24 $\frac{3}{4}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	5+4	222	Do.	F. C. Selous.
33	4 $\frac{3}{4}$	21 $\frac{1}{2}$	28 $\frac{3}{4}$	33	4+4	...	Kintail	R. P. Page.
33	4 $\frac{1}{4}$	21	29 $\frac{3}{4}$	35 $\frac{5}{8}$	5+5	...	?	W. S. Flack.
33	4	12	23 $\frac{5}{8}$	28	4+3	...	Kildonan	Sir William Pearce, Bart.
-32 $\frac{3}{4}$	5	25 $\frac{3}{4}$	29 $\frac{1}{4}$	...	6+6	...	Ardverikie	Col. W. H. Walker.
32 $\frac{1}{2}$	4 $\frac{1}{4}$	17	25 $\frac{1}{4}$	27	4+3	231	Glencarron	G. Cornwallis-West.
¹ 32	4 $\frac{1}{2}$	31	29 $\frac{1}{2}$	40	7+9	...	Rhidorroch	Viscount Powerscourt.
-32	...	...	...	34	10	...	Kintail	Sir Edmund G. Loder, Bart.
32	4	17	27 $\frac{3}{4}$	30	5+5	...	Deanish	J. G. Clarke.
32	4 $\frac{1}{2}$	18	26 $\frac{3}{4}$	29 $\frac{1}{2}$	7+4	...	Glenartney	Waldorf Astor.
32	4	20	23 $\frac{3}{4}$	27 $\frac{1}{2}$	6+6	...	Glenfeshie	Hon. H. C. Gibbs.
31 $\frac{5}{8}$	4 $\frac{1}{8}$	14 $\frac{1}{2}$	21	27	6+6	...	Kildermorie	F. Shoolbred.
31 $\frac{3}{4}$	3 $\frac{3}{4}$	...	26 $\frac{1}{2}$	...	4+4	...	Rhidorroch	Captain F. Cookson.
31 $\frac{3}{4}$	4 $\frac{3}{4}$	18	24 $\frac{3}{4}$	...	6+5	196	Inchgrundle	Countess of Dudley.
31 $\frac{1}{2}$	4 $\frac{1}{2}$	16	21	23 $\frac{1}{2}$	6+5	...	Corriemulzie	R. K. Micklethwait.
31 $\frac{1}{2}$	4 $\frac{3}{4}$	22	28 $\frac{3}{4}$	31 $\frac{1}{4}$	3+3	...	Caenlochan	E. L. Fletcher.
31 $\frac{1}{2}$	4	12 $\frac{1}{2}$	21 $\frac{1}{2}$	25 $\frac{1}{4}$	6+4	...	Do.	W. W. Gossage.
31 $\frac{1}{2}$	5	...	26 $\frac{1}{2}$	...	12	238	Auchnasheen	J. F. Laycock.
31 $\frac{1}{2}$	4	22	26 $\frac{1}{4}$	32 $\frac{1}{2}$	7+6	...	Kintail	R. P. Page.
31 $\frac{1}{2}$	4	24 $\frac{1}{2}$	29	...	5+4	...	Braulen	J. Talbot Clifton.
31 $\frac{1}{2}$	4 $\frac{1}{4}$	21	25 $\frac{1}{2}$	...	4+4	213	Invermark	W. S. M. Burns.
31 $\frac{1}{2}$	4 $\frac{3}{8}$	20 $\frac{1}{4}$	25 $\frac{3}{4}$...	3+3	...	Dalnacardoch	Hon. T. A. Brassey.

¹ Above trez.

SCOTCH RED DEER

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Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight.	Locality.	Owner.
31 $\frac{1}{2}$	4	12 $\frac{3}{4}$	24 $\frac{1}{4}$	29 $\frac{1}{4}$	6+6	lbs. ...	?	J. B. Taylor.
31 $\frac{3}{8}$	4 $\frac{3}{8}$	8 $\frac{5}{8}$	24	...	5+5	...	Glenmuick	C. Lawrence.
-31 $\frac{1}{4}$	5 $\frac{1}{2}$	25 $\frac{1}{2}$	29	...	Switch	...	Achdalen	M. K. North.
31 $\frac{1}{4}$	4 $\frac{1}{8}$	16	24 $\frac{1}{8}$	...	7+5	...	Rhidorroch	Capt. F. Cookson.
31 $\frac{1}{4}$	4 $\frac{3}{8}$	24 $\frac{7}{8}$	32	...	5+3	...	Ross-shire	E. Lort-Phillips.
31 $\frac{1}{4}$	4	...	40 $\frac{1}{4}$	...	6+6	...	?	Dr. Fancourt Barnes.
31 $\frac{1}{4}$	4	15	25	...	5+4	...	Auchnashel- lach	W. Maxwell Lyte.
31	4 $\frac{3}{4}$	24	25	...	5+5	...	Morar	J. R. Hutchison.
-31	5 $\frac{1}{2}$	32 $\frac{1}{2}$	...	38	5+4	...	Inverloch	Mrs. J. E. Platt.
31	4 $\frac{3}{4}$	19 $\frac{1}{4}$	23 $\frac{1}{4}$	33 $\frac{1}{4}$	8+6	...	S. Harris	Earl of Dunmore.
31	4 $\frac{5}{8}$	24 $\frac{1}{2}$	28 $\frac{1}{4}$	...	5+4	...	Caenlochan	F. W. Robinson.
-31	4 $\frac{1}{2}$	20	15	...	8+7	...	?	J. Benett-Stanford.
31	4 $\frac{1}{2}$	16 $\frac{1}{2}$	23 $\frac{1}{2}$	29	6+5	...	Inversanda	J. Hamilton Leigh.
30 $\frac{7}{8}$	4 $\frac{3}{8}$	25 $\frac{7}{8}$	28 $\frac{1}{8}$	...	5+6	...	Rhidorroch	W. R. Cookson.
30 $\frac{3}{4}$	5	19 $\frac{1}{2}$	24	...	6+5	...	Arisaig	J. R. Hutchison.
30 $\frac{3}{4}$	4 $\frac{1}{4}$	13	23 $\frac{1}{4}$	...	5+4	196	Invergarry	Guy Stephenson.
30 $\frac{1}{2}$	3 $\frac{7}{8}$	24 $\frac{3}{4}$	31	33 $\frac{1}{4}$	3+3	...	Inversanda	J. Hamilton Leigh.
30 $\frac{1}{2}$	4 $\frac{1}{8}$	13 $\frac{1}{2}$	23 $\frac{1}{2}$	...	6+6	...	Letterewe	Gordon Wood.
30 $\frac{1}{2}$	4 $\frac{1}{4}$	17 $\frac{1}{4}$	24 $\frac{3}{4}$	...	7+6	...	Rhidorroch	J. Talbot Clifton.
30 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	24	...	4+3	196	Glen Tana	Major Hon. A. H. Henniker.
30 $\frac{1}{2}$	4	25 $\frac{1}{2}$	28 $\frac{3}{4}$	...	4+3	...	Auchnashel- lach	Capt. H. Reynolds, R.N.
30 $\frac{1}{2}$	4 $\frac{1}{4}$	22 $\frac{1}{4}$	29	31	3+3	...	?	L. Breitmeyer.
30 $\frac{1}{2}$	4 $\frac{3}{4}$	23 $\frac{3}{4}$	26	30 $\frac{3}{4}$	7+5	...	Glencarron	J. R. Aspinall.
30 $\frac{1}{4}$	4 $\frac{1}{8}$	20	25 $\frac{1}{2}$	...	6+5	...	?	H.R.H. le Duc d'Orléans.
-30	4 $\frac{3}{8}$	...	25 $\frac{1}{2}$	...	5+5	210	Blackmount	J. G. Millais.

The spread of the six widest heads in the Duke of Fife's collection are as follows:—

40 38 37 35 35 35

The six longest antlers of this celebrated collection are respectively—

37 36 $35\frac{1}{2}$ $35\frac{1}{2}$ 35 35

The antlers of one of the red deer in Mr. C. Lucas's park at Warnham Court, Sussex, in 1889, had 34 points; 1890, 34 points; 1891, 37 points; 1891, 47 points and weighed 17 lbs.; 1893, 45 points, $16\frac{1}{2}$ lbs.

b.—Irish Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Weight. lbs.	Locality.	Owner.
¹ —42 $\frac{1}{2}$	...	...	...	12	315	Colebrooke . .	Sir Douglas Brooke, Bart.
—41	6	17 $\frac{1}{2}$	23	10+9	325	Do. . .	Do.
—40	5 $\frac{1}{2}$	28	29 $\frac{1}{2}$	8+8	355	Do. . .	Do.
39 $\frac{3}{8}$	5 $\frac{1}{4}$	14 $\frac{1}{2}$	26 $\frac{3}{8}$	7+7	375	Do. . .	Do.
38	5 $\frac{3}{8}$	20	30 $\frac{5}{8}$	10+8	350 (clean)	Do. . .	Do.
38	5 $\frac{5}{8}$	9 $\frac{3}{4}$	23 $\frac{3}{8}$	8+8	...	Roscommon . .	Earl of Kingston.
² 35	5	22	30 $\frac{1}{4}$	6+5	343	Do. . .	Do.
35	4 $\frac{3}{4}$	...	30	9	...	Ireland . .	Hon. A. Charteris.
35	5 $\frac{1}{8}$	19 $\frac{3}{8}$	26 $\frac{3}{4}$	6+5	282	Powerscourt Park	Viscount Powerscourt.
35	5 $\frac{1}{4}$	21 $\frac{1}{4}$	29	5+5	$\left\{ \begin{array}{l} 336 \text{ as he fell} \\ 252 \text{ clean} \end{array} \right.$	Do. . .	Do.
34 $\frac{1}{2}$	5	12 $\frac{1}{2}$	22 $\frac{1}{2}$	5+5	$\left\{ \begin{array}{l} 336 \text{ as he fell} \\ 252 \text{ clean} \end{array} \right.$	Do. . .	Do.
34	4 $\frac{1}{2}$	25 $\frac{1}{2}$	28 $\frac{1}{2}$	6+6	$\left\{ \begin{array}{l} 364 \text{ as he fell} \\ 280 \text{ clean} \end{array} \right.$	Do. . .	Do.
34	5	20 $\frac{1}{2}$	26	6+6	280 clean	Do. . .	Do.
34	4 $\frac{3}{4}$	...	31 $\frac{1}{2}$	6+5	372	Muckcross . .	Ralph Sneyd.
34	4 $\frac{1}{8}$	13 $\frac{1}{8}$	25	5+5	...	Colebrooke . .	Major J. M. Rogers.
33 $\frac{3}{4}$	.5	...	26	5+5	308	Muckcross . .	Hon. Mrs. Bourke.
31	4 $\frac{3}{4}$	11	20 $\frac{3}{4}$	7+7	...	Do. . .	Ralph Sneyd.
—31	4 $\frac{3}{4}$	18 $\frac{1}{2}$	22	5+7	...	?	Dublin Museum.
30 $\frac{1}{4}$	4	...	26 $\frac{1}{2}$	5+5	276	Muckcross . .	Geoffrey Carr-Glyn.

¹ See Millais's *British Deer and their Horns*.

² Spread, 36 $\frac{1}{2}$ inches.



Antlers of Exmoor Stag.

c.—West of England Specimens.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Locality.	Owner.
¹ 41	5 $\frac{1}{4}$	21 $\frac{1}{2}$	32 $\frac{1}{4}$	...	5+5	Exmoor	Sir John Heathcoat-Amory, Bart.
40	5 $\frac{1}{4}$	10	28	38	7+6	Do.	Do.
39	5 $\frac{3}{4}$	15 $\frac{3}{4}$	28 $\frac{1}{2}$	...	6+6	Do.	R. A. Sanders.
38 $\frac{1}{2}$	5 $\frac{1}{8}$	17 $\frac{1}{8}$	31 $\frac{1}{2}$	...	6+6	Quantock Hills	Viscount Ebrington; killed in 1885.
37 $\frac{1}{2}$	5	22 $\frac{1}{4}$	30 $\frac{1}{4}$	...	7+7	Exmoor	C. Nelder; killed in 1803.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	27 $\frac{1}{2}$	35 $\frac{5}{8}$	48	6+5	Do.	Sir John Heathcoat-Amory, Bart.
37	5 $\frac{1}{2}$	15	27 $\frac{1}{2}$	32 $\frac{1}{2}$	6+6	Quantock	E. A. V. Stanley.
36 $\frac{3}{4}$	6	21 $\frac{1}{2}$	28 $\frac{7}{8}$	...	6+7	Exmoor	Sir A. Acland-Hood, Bart.; killed in 1893.
36 $\frac{1}{2}$	5 $\frac{5}{8}$	12	23 $\frac{5}{8}$	30 $\frac{1}{2}$	7+6	Stoodleigh	Ian H. Amory.
36	4 $\frac{3}{4}$	10	24 $\frac{3}{8}$	30 $\frac{1}{4}$	9+7	Exmoor	R. A. Sanders.
36	5 $\frac{1}{4}$	12 $\frac{1}{8}$	23	29 $\frac{1}{2}$	6+5	Do.	Capt. H. H. Amory.
36	5 $\frac{5}{8}$	14 $\frac{3}{4}$	26	34 $\frac{1}{2}$	7+6	Do.	Morland Greig.
35 $\frac{1}{2}$	5	20 $\frac{7}{8}$	27 $\frac{1}{2}$	...	6+6	Do.	Earl Fortescue; killed in 1812.
35	5	15 $\frac{3}{4}$	27	...	6+5	Do.	Com. G. F. Inglefield, R.N.
35	4 $\frac{1}{4}$	25 $\frac{1}{2}$	32 $\frac{3}{4}$	...	5+6	Do.	Sir C. T. D. Acland, Bart.; killed in 1893.
34 $\frac{5}{8}$	5 $\frac{5}{8}$	23 $\frac{1}{4}$	31 $\frac{1}{4}$	...	6+6	Do.	Viscount Ebrington; killed in 1881.

¹ Weight 333 lbs., clean. Length of brow-tine, 17 inches.



Head of Stoke Park Red Deer.

d.—English Park Specimens.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight (clean) lbs.	Locality.	Owner.
-42 $\frac{1}{2}$	6 $\frac{3}{4}$	...	...	40	12	...	Melbury, Dorset	Earl of Ilchester.
41 $\frac{1}{4}$	5	¹ 22 $\frac{3}{4}$	32	...	7+6	...	Langley Park	J. G. Millais.
40 $\frac{3}{4}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	31	41	5+5	...	?	R. V. Berkeley.
39 $\frac{1}{2}$	¹ 5 $\frac{1}{4}$	23 $\frac{1}{2}$	26 $\frac{3}{4}$	35 $\frac{3}{4}$	5+5	...	Woburn	Duke of Bedford.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	22	29 $\frac{1}{2}$	41 $\frac{1}{2}$	8+7	...	Stowe	H.R.H. le Duc d'Orléans.
-37 $\frac{1}{2}$	7 $\frac{1}{2}$	29 $\frac{1}{2}$	27 $\frac{1}{2}$	36 $\frac{1}{2}$	10+9	...	Welbeck	Duke of Portland.
-37	7 $\frac{1}{2}$	...	...	37	23	434	Warnham	T. Lucas.
-36	6 $\frac{1}{2}$	24	30	...	6+6	...	Vaynol, North Wales	G. W. D. Assheton- Smith.
36	¹ 5 $\frac{1}{2}$	19	28 $\frac{1}{2}$	...	9+11	...	Woburn	Duke of Bedford.
35 $\frac{1}{2}$	5	7 $\frac{1}{2}$	20	25	6+6	...	?	H. S. O'Brien.
34 $\frac{1}{2}$	7	33	26 $\frac{3}{4}$	...	20+20	...	Warnham	W. H. Lucas.
34 $\frac{1}{4}$	¹ 5 $\frac{1}{2}$	18 $\frac{1}{2}$	26	...	8+8	...	Woburn	Duke of Bedford.
34	4 $\frac{1}{2}$	...	23	...	6+6	...	Stowe	H.R.H. la Comtesse de Paris.
34	5 $\frac{5}{8}$	21 $\frac{3}{4}$	28 $\frac{1}{2}$	...	7+7	...	Dorset	Earl of Ilchester.
34	6 $\frac{1}{2}$	...	...	48 (about)	45	...	Warnham	C. T. Lucas.
33 $\frac{1}{2}$	4 $\frac{7}{8}$	...	33	...	6+6	...	Stowe	H.R.H. le Duc d'Orléans.
33 $\frac{1}{2}$	5 $\frac{1}{4}$	21 $\frac{1}{2}$	28 $\frac{1}{2}$	...	9+9	...	Woburn	Duke of Bedford.
33	7 above trez	...	...	45 $\frac{1}{2}$	44	...	Warnham	C. T. Lucas.

Some of the above measurements are recorded by J. G. Millais in *British Deer and their Horns*.

¹ White Stag.



Skull and Antlers of Old English Red Deer.
(Found in cutting the Manchester Ship Canal.)

e.—Ancient British and Irish Specimens.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Where dug up.	Owner.
-47½	8	35	...	...	5+8	Manchester Ship Canal excavations	Sir R. M. Brooke, Bart.
40	7½	22½	28½	43½	12+9	Combermere	Duke of Westminster.
38½	5	18	30	39½	8+6	Ireland	Viscount Powerscourt.
36½	5	24	25	35½	8+8	Do.	Do.
36	5½	23	27	37½	10+9	Kerry, Ireland	Do.
1-36	5½	...	...	42½	23	South Ireland	Sir Douglas Brooke, Bart.
35½	5½	26½	32½	42½	13+11	Do.	Sir Victor Brooke's Col- lection.
35½	5½	31½	27½	...	12+10	Ireland	Viscount Powerscourt.
-35	7	...	21	24	9+11	England	C. G. Burrow.
34½	5	22	30	...	10+10	Ireland	Viscount Powerscourt.
33	4½	27	28½	35½	9+8	Do.	Do.

¹ Recorded by J. G. Millais.

f.—Norwegian Specimens.

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. lbs.	Locality.	Owner.
-34	...	...	...	...	7	...	Norway . .	J. H. Thomas.
31 $\frac{1}{2}$	4 $\frac{3}{4}$	...	25 $\frac{1}{2}$	...	6+5	...	Do. . .	A. Brassey.
31 $\frac{1}{2}$	4 $\frac{1}{2}$	...	24 $\frac{1}{2}$	...	5+5	...	Do. . .	Sir H. Seton-Karr.
31 $\frac{1}{2}$	4 $\frac{3}{4}$	...	28	...	4+3	...	Do. . .	E. M. Denny.
31	4 $\frac{1}{4}$	23	25	29 $\frac{1}{2}$	6+6	..	Do. . .	J. H. Thomas.
30	5	...	29	...	12	280	Do. . .	E. M. Denny.
-30	4 $\frac{1}{4}$	...	28	33	5+4	...	Do. . .	Sir H. Seton-Karr.
30	4 $\frac{1}{4}$	29 $\frac{1}{4}$	30 $\frac{3}{4}$	...	5+4	...	Do. . .	Do.
29 $\frac{1}{4}$	4 $\frac{5}{8}$	26	30 $\frac{1}{4}$	...	6+5	...	Do. . .	G. L. Denman.

g.—Spanish Specimens.

1-40	...	...	36 $\frac{1}{2}$	...	17	Sierra Morena, Spain	Abel Chapman.
-37 $\frac{1}{2}$	...	...	34 $\frac{1}{2}$	...	15	Sierra Morena . .	Do.
34 $\frac{1}{8}$	5 $\frac{3}{4}$	...	Single cast antler	...	8	Do. . .	Do.
-32 $\frac{1}{2}$	...	...	...	...	13	Plains of Andalucia .	W. J. Buck.
-31	4 $\frac{5}{8}$	28	...	...	15	Coto Doñana . .	P. Garvey.
-29	5 $\frac{1}{4}$	...	25	...	12	Andalucia . .	Abel Chapman.
-28 $\frac{1}{2}$	5 $\frac{1}{4}$	...	26 $\frac{1}{4}$	...	13	Do. . .	Do.
-28 $\frac{1}{2}$	4 $\frac{1}{4}$	21	17 $\frac{3}{4}$	...	10	Coto Doñana . .	Do.
23	4 $\frac{5}{8}$	29 $\frac{1}{2}$	22 $\frac{1}{2}$	...	12	Do. . .	J. C. Chapman.
22 $\frac{1}{2}$	4 $\frac{1}{8}$	21 $\frac{1}{2}$	19	...	12	Do. . .	B. F. Buck.

¹ A mountain head. There are two races in Spain. By far the largest are those of the "sierras" (or mountains), where good heads run from 30 to 40 inches. The stags of the "cotos" (or wooded plains) seldom reach, and rarely exceed, 30 inches in horn, and the heaviest we have weighed scaled 205 lbs. clean.



Red Deer shot by Prince Henry of Liechtenstein at Tartarow, Galicia, 1895.
Length, 46 inches. Weight, 20 lbs. 14 ozs.



Two Red Deer killed on the estate of Prince Henry of Liechtenstein at Tartarow, Galicia.

Some of the specimens in this list from Eastern Europe probably belong to the Maral, or Eastern race.

Number of Points.	Weight along Avondupois, lbs. ozs.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag, lbs.	Locality.	Owner.
16	23 6½	53½	9½	8½	7½	7½	...	...	...	...	526	Zemplen, Hungary	Count Géza Andrassy.
18	over 20 lbs.	53½	11½	10	...	15½	10	...	...	...	453	Galicia	H.R.H. D. Miguel, Duke of Braganza.
18	20 5	52	...	...	...	...	7-25	...	32-75	45	504	Galicia	E. N. Buxton.
14	23 0	51½	10½	8½	6½	8½	...	...	...	...	...	Ungvar	Count Belá Szechenyi.
11	...	51	11	...	7	9	7-20	27	38	47	519	Zemplen Comitatus Hungary	Count Géza Andrassy.
14	...	51	...	...	...	...	5-5	38-5	42-5	45-25	...	Do.	Viscount Powerscourt.
16	...	51	...	...	...	...	7-25	23-5	39-5	50	...	Do.	Do.
14	20 8	50½	11½	9½	7½	6½	...	...	...	...	418	Do.	Count Géza Andrassy.
14	...	50	...	...	...	...	6	42	40	...	...	La Mandria	Archduke Frederick.
21	21 3	50-4	...	6-08	...	...	...	30	...	55-9	...	Pilis Mountains Galicia	Duke of Ratibor.
18	...	50	...	...	...	...	7½	...	...	48	...	Radauc	Rudolph Pick.
14	31 and an oz. or two	49½	...	...	...	...	...	...	39½	...	...	Prince Lulu Rohan.	Count Joseph Hoyos.
18	...	49½	10½	9½	6½	9½	...	...	...	48½	354	Hungary	Count Rudolf Erdödy.
16	20 0	49-6	10-8	9-3	7-11	9-7	6-8	55-4	43-11	...	433	Do.	Count Rudolf Erdödy.
12	21 0	49	10½	...	...	...	...	...	...	...	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
16	...	49	...	...	...	...	...	...	...	43	...	Galicia	Prince Henry of Liechtenstein.
20	25 3	48-8	...	...	...	...	...	...	...	...	...	S.W. Hungary	Prince Hugo Windischgrätz.

1 Dug up.

Number of Points.	Weight Avoidupois, lbs. ozs.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Sting, lbs.	Locality.	Owner.
14	...	48½	...	...	...	...	6¾	34	30	37½	...	Carpathians	Lieut.-Col. L. Marshall.
-19	...	48	...	8½	...	...	...	...	...	...	...	Moravia	Prince John of Liechtenstein.
-19	...	48	...	9	...	...	...	...	27	48	...	Gotha	H.R.H. the Duke of Saxe-Coburg and Gotha.
20	...	48	...	...	...	...	6½	33½	41½	51¾	...	Germany	Viscount Powerscourt.
118	...	48	...	...	...	...	7	38	43	58	...	Hungary	Do.
-14	23 0	48	10	9½	7½	12	7½	13	25	32	519	Galicia	H.R.H. D. Miguel, Duke of Braganza.
-16	20 9½	47½	11½	9½	7½	7½	...	...	...	...	455	Hungary	Prince Philip of Saxe-Coburg and Gotha.
15	...	47½	...	...	...	...	5¾	30	40	50	...	Hungary	Viscount Powerscourt.
-16	...	47½	11½	8½	7½	8½	...	35½	25½	29½	532	Do.	Count Ferdinand Trauttmansdorff.
-13	...	47	...	...	...	...	6½	12¾	31½	...	...	Galicia	A. von André.
8	...	47	...	...	...	...	6½	23	38½	...	...	Germany	Viscount Powerscourt.
-18	19 13	46½	11	9½	6¾	7½	...	...	...	...	523	S.W. Hungary	Count László Majláth.
-16	22 14½	46½	12½	...	...	...	...	...	...	...	...	N.E. Hungary	Head-keeper Ganovszky.
-20	20 13	46½	9½	7½	7½	7½	...	...	...	...	583	Do.	Count Francis Nádasdy.
-16	19 6	46½	9½	8½	6½	6½	...	...	...	...	590	S.W. Hungary	Count László Majláth.
-16	20-68	46-46	11-02	9-45	8-07	6-89	...	...	...	...	...	Hungary	Prince Victor Ratibor.
-22	...	46½	9½	9½	6½	8½	...	52½	39½	42½	479	Do.	Count Max Hoyos.
-20	22 9	46½	10½	9½	6½	8½	...	...	...	...	508	Do.	Count Belà Szechenyi.
-14	17 11½	46½	9½	8½	...	6½	...	...	...	...	523	?	Count Jenő Zichy.
-16	19-91	46-06	11-81	9-25	6-89	7-28	...	...	...	...	...	Hungary	Count Mitrowszky.
-14	...	46	...	...	...	...	...	...	36	...	...	Galicia	Prince Henry of Liechtenstein.

1 Dug up.



The record Mountain Antlers of His Majesty the Emperor and King of Austria-Hungary.



“Records of a Fight” found near Juharos, Hungary, 1875.
In the collection of His Majesty the Emperor and King of Austria-Hungary.

Number of Points.	Weight Avoirdupois, lbs. ozs.	Length along Curve.	Circumference of Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag, lbs.	Locality	Owner
16	...	46	...	...	...	6 $\frac{3}{4}$	38	42 $\frac{1}{2}$	53	...	Hungary	Viscount Powerscourt.
13	...	46	9	...	...	7 $\frac{3}{4}$	19 $\frac{3}{4}$	31	...	...	N. Germany	Do.
-18	...	46	...	...	...	...	...	36	60	...	Gotha	H.R.H. the Duke of Saxe-Coburg and Gotha.
-13	...	46	...	...	...	7 $\frac{1}{4}$	...	29 $\frac{1}{2}$	37	...	Carpathians	Prince Altenburg.
-18	...	46	10	...	...	...	...	35	54 $\frac{1}{2}$	...	Bukowina	Count Erbach.
10	19 10 $\frac{1}{2}$	45 $\frac{1}{16}$	11 $\frac{1}{16}$	7 $\frac{1}{16}$	7 $\frac{1}{16}$	...	...	...	...	...	Hungary	Count Michael Esterhazy.
14	19 11 $\frac{1}{2}$	45 $\frac{1}{16}$	10 $\frac{5}{8}$	7 $\frac{1}{16}$	8 $\frac{1}{4}$	...	...	...	...	...	Do.	Archduke Joseph Augustus.
16	19 8	45 $\frac{1}{16}$	11	6 $\frac{1}{16}$	7 $\frac{7}{8}$	...	...	...	...	...	Do.	Head-keeper Ganowszky.
24	23 4	45 $\frac{1}{16}$	10 $\frac{5}{8}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	...	...	...	...	...	Do.	Count T. Eltz.
12	20 8	45 $\frac{5}{16}$	9 $\frac{1}{8}$	6 $\frac{5}{16}$	7 $\frac{1}{2}$	...	...	...	...	572	Do.	Count Belá Szechenyi.
12	20 6	45 $\frac{5}{16}$	11 $\frac{1}{2}$	7 $\frac{1}{8}$	6 $\frac{1}{4}$	...	...	...	...	640	Do.	Archduke Joseph Augustus.
-10	...	45 $\frac{5}{8}$	...	...	...	6 $\frac{1}{8}$	26 $\frac{3}{8}$	38 $\frac{1}{4}$	...	...	Do.	Maj.-Gen. Sir Arthur Ellis.
...	...	45 $\frac{1}{2}$	...	...	...	...	...	...	44	...	Do.	Sir Edmund G. Loder, Bart.
20	17-05	45-27	10-04	7-28 $\frac{1}{2}$	7-48	...	...	...	...	...	Do.	Count George Erdödy.
14	19 8	45 $\frac{1}{4}$	10 $\frac{5}{16}$	6 $\frac{1}{8}$	6 $\frac{1}{8}$	...	...	...	...	433	Do.	Archduke Joseph Augustus.
15	...	45 $\frac{1}{4}$	9 $\frac{7}{8}$	...	...	...	23 $\frac{5}{8}$	34 $\frac{1}{4}$	...	...	Roumania	Prince Demeter Ghika.
-22	28 10	45 $\frac{1}{8}$	12	7	14 $\frac{0}{16}$	8 $\frac{3}{4}$	29 $\frac{3}{16}$	34 $\frac{1}{4}$	...	...	Hungary	Prince Montenuovo.
-14	...	45	9	5 $\frac{1}{2}$	9	6	18 $\frac{1}{2}$	34 $\frac{1}{2}$	41 $\frac{1}{2}$	...	?	W. H. Wilson.
-11	...	45	8 $\frac{1}{2}$	...	...	5 $\frac{3}{4}$	21 $\frac{1}{2}$	33	41	...	Galicia	Prince E. Demidoff.
14	...	44 $\frac{3}{4}$	...	...	...	6	30 $\frac{1}{4}$	29 $\frac{1}{4}$	39	...	Hungary	Hon. Walter Rothschild.
22	20 4 $\frac{1}{2}$	44 $\frac{1}{2}$	12 $\frac{3}{16}$	7 $\frac{1}{16}$	6 $\frac{1}{4}$	...	...	...	...	418	Do.	Archduke Frederick.
20	...	44 $\frac{1}{2}$	...	...	...	...	14 $\frac{1}{2}$	28 $\frac{3}{4}$	...	...	Carpathians	Viscount Powerscourt.

Number of Points.	Weight. Avoirdupois. lbs. ozs.	Length along Curve.	Circumference of Burr.	Circumference above Burr.	Circumference above Middle Point.	Circumference below Crown.	Circumference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag. lbs.	Locality.	Owner.
-20	15.73	44.49	9.05	7.87	9.05	12.21	...	...	...	...	...	S.W. Hungary	Count Tassilo Festetics.
-14	16.17	44.49	10.63	9.45	6.49†	8.07	...	...	...	...	...	N. Hungary	Count Bela Szechenyi.
12	18 3	44½	11½	9½	7½	6¾	...	...	...	...	352	S.W. Hungary	Archduke Frederick.
22	18 4½	44½	10½	9½	6½	7½	...	...	...	...	...	N. Hungary	Prince Philip of Saxe-Coburg and Gotha.
-8	17.38	44.09	11.41	9.84	7.68†	7.68	...	...	...	...	...	Carpathians	Count Michael Esterhazy.
-14	18.37	44.09	11.41	10.24	7.28	6.89	...	...	...	...	...	Do.	Jeno Kund.
17	...	44	...	...	...	...	7¾	31	39½	55½	...	Germany	Viscount Powerscourt.
-18	19.14	43.7	10.04	8.46	7.09†	9.64	...	...	...	...	...	Hungary	Count Rudolph Erdödy.
-14	20.24	43.7	10.43	8.27	7.09†	7.28	...	...	...	...	...	Do.	F. Pausinger.
-20	18 0	43.6	10.02	8.03	...	12.23	7.64	36.06	25.12	...	...	Do.	Count Tassilo Festetics.
12	...	43½	11	...	6½	5¾	6½	15	29½	36	...	Galicia	A. von André.
-20	17.6	43.31	10.04	8.07	7.28	8.27	...	...	...	...	...	Hungary	Count Tassilo Festetics.
-14	20 1½	42½	9½	8½	7½	7½	...	...	...	...	484	Do.	Count B. Keglevich.
-16	22 0½	42½	12½	10½	7½	...	...	...	...	...	446	Do.	Count László Májláth.
-20	...	42½	9½	8½	7½	9¾	...	47½	29¾	36½	565	Do.	Count Henry Fünfkirchen.
-16	16.06	42.91	9.84	8.27	6.69	7.09	...	...	...	...	...	Do.	G. Jankovich.
-20	20 13	42½	10½	9½	7½	7½	...	...	...	...	363	Do.	Archduke Frederick.
11	...	42½	...	...	...	...	6	38	43½	50½	...	Galicia	Prince E. Demidoff.
-20	...	42.3	9.1	8.5	...	...	...	...	...	...	...	Do.	Count Szechenyi.
-18	20.5	42.8	10.4	8.9	8.1	11	8	51.6	39.1	...	458	Hungary	Count Rudolf Erdödy.
-18	19 1	42.7	...	8.5	...	...	...	...	...	...	...	Szilvás	Count Bombelles.

1 "Picked-up" specimen.

- 16	17	6	42.13	11.61	10.24	7.09†	7.68	...	...	...	583	Carpathians	Count Fery Nádasdy.
- 20	18	8	42.1	...	9 $\frac{1}{10}$	...	...	...	...	...	...	Munkacs	Count Jose Hoyos.
16	...	...	42	...	...	...	...	6 $\frac{3}{4}$	26	35	42	Germany	J. Hamilton Leigh.
12	...	...	42	...	...	...	...	...	...	35 $\frac{1}{2}$	40	Galicia	E. N. Buxton.
...	...	...	42	...	...	...	...	5 $\frac{1}{2}$	...	30	...	Styria	Sir Clement Hill.
17	18	0	42	8 $\frac{5}{8}$	...	...	...	...	42	...	...	?	Count Henry Coudenhove.
12	...	...	41 $\frac{7}{8}$	...	...	...	...	5 $\frac{1}{4}$	...	25 $\frac{1}{4}$	...	Germany	British Museum.
18	18	3	41 $\frac{3}{4}$	10 $\frac{1}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{2}$	7 $\frac{3}{4}$	...	...	...	391	Hungary	Archduke Frederick.
18	22	11	41 $\frac{1}{2}$	10 $\frac{1}{4}$	9 $\frac{1}{10}$	7 $\frac{3}{8}$	8 $\frac{1}{4}$	...	...	...	429	Do.	Do.
18	19	2 $\frac{1}{2}$	41 $\frac{3}{4}$	10 $\frac{1}{4}$	9 $\frac{1}{10}$	7 $\frac{3}{8}$	6 $\frac{1}{10}$	...	...	...	330	Do.	Do.
- 18	18.26	41.73	...	10.24	9.25	7.09†	8.07	...	...	...	...	Do.	Count Fery Nádasdy.
12	...	41 $\frac{1}{2}$	...	...	...	...	...	5 $\frac{1}{4}$	22 $\frac{1}{2}$	32	...	Do.	H. R. H. le Duc d'Orléans.
- 14	20	0	41	...	10 $\frac{1}{4}$	7 $\frac{3}{8}$	9 $\frac{1}{10}$	...	...	31 $\frac{3}{8}$	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
- 12	21.01	40.94	...	12.21	10.63	7.09†	8.27	...	...	...	552	Do.	Do.
- 11	...	40 $\frac{5}{8}$	...	...	...	...	8 $\frac{3}{4}$	...	28 $\frac{3}{8}$	31 $\frac{1}{2}$	...	Roumania	Prince Nicolas Ghika.
26	18	3	40 $\frac{9}{10}$	10 $\frac{3}{4}$	8 $\frac{1}{10}$	6 $\frac{5}{10}$	...	...	...	...	...	Hungary	Count Michael Esterhazy.
17	26	0	40 $\frac{9}{10}$	10 $\frac{1}{10}$	9 $\frac{7}{10}$	8 $\frac{1}{10}$	9 $\frac{3}{8}$	...	...	...	...	Do.	Head-keeper Ganovszky.
- 13	...	40 $\frac{1}{4}$	...	...	...	...	...	5	20 $\frac{3}{4}$	27 $\frac{3}{8}$	...	Tyrol	H. R. H. the Duke of Saxe-Coburg and Gotha.
- 20	18.50	40.10	...	...	8.10 (?)	...	...	...	...	...	...	Agarév, S. W.	Count Tassilo Festetics.
20	20	4 $\frac{1}{2}$	40 $\frac{1}{10}$	10 $\frac{1}{4}$	9 $\frac{1}{10}$	7 $\frac{1}{10}$	9 $\frac{1}{10}$	...	...	...	455	Hungary	Archduke Joseph Augustus.
- 18	...	40	...	10	...	...	...	...	...	28	49	Gotha	H. R. H. the Duke of Saxe-Coburg and Gotha.
10	...	40	...	...	...	...	...	6 $\frac{1}{2}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	45 $\frac{1}{4}$	Moravia	G. D. Whatman.
15	...	39 $\frac{1}{2}$	...	10	9 $\frac{1}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	21 $\frac{1}{4}$	30 $\frac{1}{4}$	37 $\frac{1}{2}$	Hungary	A. von André.
- 14	22	0 $\frac{1}{2}$	38 $\frac{1}{4}$	12.1 $\frac{3}{8}$	10 $\frac{1}{4}$	8 $\frac{5}{8}$	8 $\frac{5}{10}$	...	...	...	433	Do.	Prince Philip of Saxe-Coburg and Gotha.

Number of Points.	Weight lbs. ozs. Avoirdupois.	Length along Curve.	Circum- ference of Burr.	Circum- ference above Burr.	Circumfer- ence above Middle Point.	Circumfer- ence below Crown.	Circum- ference between Bez and Trez.	Tip to Tip.	Widest inside.	Spread.	Weight of Stag. lbs.	Locality.	Owner.
- 22	21 13	38½	11¼	9½	7½	8½	...	...	...	...	...	S.W. Hun- gary	Count Tassilo Festetics.
- 14	...	37	...	...	...	5½	5½	21½	30	...	...	Macedonia	H. J. Elwes.
- 20	...	36½	10½	7½	...	7½	...	...	12½	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
10	...	31½	...	...	...	4½	4½	12	18½	...	...	Tenuta la Mandria	H.R.H. le Duc d'Orléans.
- 44	19 0½	30	...	...	...	...	...	...	...	44½	342 (clean)	Rominten, N.E. Ger- many.	H.I.M. the German Em- peror.

NOTES AND EXPLANATIONS.

-- Many specimens marked thus are uneven pointers.

FOUR GERMAN RED DEER IN THE COLLECTION OF VISCOUNT POWERSCOURT.

	No. 1. ins.	No. 2. ins.	No. 3. ins.	No. 4. ins.		No. 1. ins.	No. 2. ins.	No. 3. ins.	No. 4. ins.
Greatest width	40½	48	47½	43	Length of trez-time (right)	14	20	12	20½
Length of antlers	42½	52½	42½	45½	Do. do. (left)	14	22½	13	20½
Length of brow-time (right)	13½	17½	15½	7½	Number of points (right)	7	11	14	12
Do. do. (left)	12	18½	15	7½	Do. do. (left)	11	10	11	11
Length of bez-time (right)	16½	12½	10½	8½	Circumference	7½	10½	7½	8½
Do. do. (left)	16	13½	12	9					

Viscount Powerscourt informs me that the 18 stag heads in the entrance hall at Powerscourt, mounted on papier-mache heads, were bought at Munich in 1863, by the advice of the late Count Arco-Zinneberg, the owner of the famous collection in the Wittelsbacher Platz at Munich. The hall where Count Arco-Zinneberg's collection hangs contains upwards of 2500 heads of German Red-deer and Roe-deer of extraordinary weight and size, forming, with the one exception of the King of Saxony's collection at Moritzburg, near Dresden, perhaps the finest in the world. Count Arco became so well known as a collector that every fine specimen was brought to him for purchase. Count Erbach's collection at Erbach in the Odenwald is also one of the finest in Germany.

Hungary, 1868.



Styria, 1881.



Hungary, 1873.



Hungary, 1873.

The Trophies of His Majesty the Emperor and King of Austria-Hungary.

Some of the Trophies of His Majesty the Emperor and King of Austria-Hungary.

Hungarian Specimens.

Date.	Tips.	Length.		Tip to Tip.	Widest		Circumference of Antler.	Circumference of Burr.	Locality.
		Outside Curve.	Burr to Highest Point.		Inside.	Outside.			
24th September 1874	6+7	41½	35¾	21½	33	31¾	7½	...	Szent Kiraly.
28th " "	6+6	40¾	34	15½	28¾	32	5¾	...	Do.
6th October 1868	6+7	40½	36	35½	35½	42½	6¾	9	Babat.
" " 1873	7+10	39¾	35½	29½	32¾	33½	5¾	8¾	Szent Kiraly.
7th " "	8+6	39½	36	21¾	27	35½	6½	...	Do.
" " "	7+8	37¾	34	25¾	31¾	41	6	...	Do.

Alpine Specimens.

8th August 1892	5+5	¹ 41½	33	12½	27½	23½	7	8	Brachberg (Upper Austria).
1st October 1885	4+4	41½	28	18	32½	...	4-7	...	Graben, Styria.
30th September 1885	5+4	37¾	31½	24¾	31¾	28	6	...	Taschl do.
2nd October 1881	10+7	36¾	30¾	27½	31½	40½	7½	...	Mützsteg do.
3rd " 1884	6+6	36	31½	14¾	27	...	6¾	...	Grasleiten do.
5th " 1889	7+8	34¾	33	14¾	23¾	25¾	6	...	Graben.

¹ This is the finest head of Alpine Red Deer known.



Antlers of Red Deer. From a specimen in the Castle at Moritzburg.
After Dr. A. B. Meyer.

i.—Ancient Continental Specimens.

Length (straight).	Circum- ference.	Tip to Tip.	Spread.	Points.	Locality.	Owner.
...	...	...	...	33+29	?	H.M. the King of Saxony, Moritzburg.
1-48	14 of burr	...	6 ft. 3 $\frac{6}{10}$	12+11	?	Do.
...	...	...	...	25+12	?	Do.
...	...	...	...	28	?	H.R.H. the Duke of Saxe- Coburg and Gotha.
-46 $\frac{1}{2}$	8 $\frac{3}{8}$ above trez	5 ft. 2 $\frac{1}{4}$	...	22	Alpine Stag?	Count Erbach-Erbach.
...	9 $\frac{3}{8}$	...	...	28	Do.	Do.
...	...	...	...	22	Switzerland	Do.
(on curve) 39 $\frac{3}{4}$	5 $\frac{3}{4}$	16	22 $\frac{1}{2}$ inside	9+9	?	Viscount Powerscourt.
39 $\frac{1}{2}$	6 $\frac{1}{2}$	22	31 $\frac{1}{2}$ 39 outside	6+6	Germany .	Do.

¹ Weight, 47 $\frac{1}{2}$ lbs.

j.—New Zealand Specimens (introduced).

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
42	5½	24½	33½	37½	6+5	...	?	A. D. Whatman.
-42	5½	...	...	37½	9+7	...	Otago . .	W. Allen.
-41½	6	16	...	28½	6+5	...	Do. . .	Do.
-41	6¼	...	...	31½	6+5	...	Do. . .	J. S. Handyside.
-41	5¼	...	...	37	7+6	...	Do. . .	C. R. Westmacott.
-39	5½	...	...	31	6+6	...	Do. . .	H. McLean.
-38	5	...	...	33	6+6	...	Do. . .	E. C. Studholm.
-38½	6	32	25	...	17	...	Wairarapa . .	J. Strang.
37½	5¼	19¼	28½	...	6+6	400 lb. esti- mated	Otago . .	C. R. Westmacott.
37	5¼	18½	24½	33¾	7+6	...	Do. . .	E. L. Fletcher.
-37	5	...	...	34	6+5	...	Do. . .	W. Telford.
-36½	6¾	...	32½	...	9+9	...	Wairarapa . .	J. S. Handyside.
-36	4¾	...	...	33¼	5+5	...	Otago . .	W. Telford.
-35½	9½	27	23½	...	22	...	Wairarapa . .	N. Grace.
-35¼	7½	40½	33	...	6+7	...	Do. . .	T. E. Donne.
-34½	6½	39	31½	...	9+9	...	Do. . .	Do.
31½	5¾	10½	18	...	6+7	...	North Island . .	Rupert Wilkin.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
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Skull and Antlers of Eastern Red Deer shot in the Western Caucasus by Mr. St. George Littledale.

EASTERN RED DEER or MARAL (*Cervus elaphus maral*).

In this race of the red deer, which probably intergrades with the typical race in the western Carpathians, the height at the shoulder reaches to about $4\frac{1}{2}$ feet, and the build is stouter, the neck thicker, and the head longer and more pointed than in the true red deer. The reddish summer coat of immature animals is very generally marked with numerous yellowish spots; and the colour of the winter coat is dark slaty gray on the back, with the tail-patch of a very bright

yellow, and a large amount of black on the shoulders, thighs, and underparts. The large and massive antlers are generally less complex than those of the typical race, the number of points being seldom more than eight on a side, and frequently only six; while the bez-tine, which may be wanting, is often shorter than the long and upwardly-curved brow-tine, and the fourth tine is generally more distinct from the crown. The average weight is given as about 560 lbs.

The typical locality of this race of red deer is the Caspian provinces of Northern Persia, whence it extends into the Crimea, and probably Asia Minor, and so on into Transcaucasia, the Caucasus, probably Circassia, and the Galician Carpathians. The exact limits between the range of this and the typical race are not yet determined; and it is noteworthy that specimens from the Caucasus have shorter faces than those from Northern Persia, and thus approximate to the true red deer. Sportsmen prefer to call this race the Hungarian red deer; this, however, is scarcely legitimate, as Hungary is not the typical locality, and the deer from that country are not precisely similar to the true Persian maral. Some naturalists might even be disposed to give them a separate scientific name.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Esti- mated Weight. lbs.	Locality.	Owner.
48½	6	30	41½	...	5+6	...	Ichater Dagh, Crimea	H. R. H. the Duke of Saxe- Coburg and Gotha.
48½	7½	(single antler)	...	...	12	...	Asia Minor	British Museum (Lord A. Hay).
48	7½	...	...	...	..	...	Caucasus	St. George Littledale.
47½	5½	38	...	...	6+5	...	Do.	Do.
47½	7½	33½	43½	54½	10+9	...	Do.	Do.
46½	5½	18	33	...	8+8	...	Do.	British Museum.
-46½	6½	...	39	...	8+6	...	Asia Minor	F. E. Whittall.
45½	5½	42½	49	52	6+6	...	Caucasus	S. H. Whitbread.
-45½	8½	65½	...	...	14	...	Do.	Grand Duke Mikhael.
45½	7½	32½	40½	46	8+8	...	Do.	Prince E. Demidoff.
45½	5½	42	35½	...	6+7	...	Ak Dagh, Asia Minor	The MacLaine of Lochbuie.
45½	7½	...	...	...	9+6	...	Asia Minor	Sir Edmund G. Loder, Bart.
-45	8	36	42	...	11+10	746	Caucasus	Prince E. Demidoff.
45	6½	30½	38½	44½	7+6	...	Asia Minor	H. O. Whittall.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Esti- mated Weight.	Locality.	Owner.
44 $\frac{1}{2}$	7 $\frac{1}{8}$	19 $\frac{1}{4}$	26	36 $\frac{1}{4}$	7+6	...	Asia Minor	F. W. Baker.
44 $\frac{1}{4}$	6 $\frac{7}{8}$	(single antler)	...	...	9	...	Do.	British Museum (C. G. Danford).
43 $\frac{1}{2}$	6	...	40	...	8+6	...	Do.	M. Le C. Findlay.
43 $\frac{1}{2}$	5 $\frac{3}{4}$	16	28	...	6+6	...	Crimea.	Earl of Dunmore.
-42 $\frac{1}{2}$	6 $\frac{1}{2}$	25	...	34	10+11	...	Crimea (?)	H. J. Elwes.
42 $\frac{1}{2}$	7	27	31 $\frac{1}{2}$	34 $\frac{1}{2}$	8+7	...	Caucasus	Prince E. Demidoff.
42	6 $\frac{1}{4}$	28	33 $\frac{1}{2}$	44 $\frac{1}{2}$	9+8	...	?	R. A. Cooper.
42	6	26 $\frac{1}{4}$	34 $\frac{1}{2}$	42	7+6	...	Ak Dagb	T. Bowen Rees.
41 $\frac{1}{2}$	5 $\frac{1}{4}$	24	32	36 $\frac{1}{2}$	8+7	...	?	Duke of Bedford.
41 $\frac{1}{8}$	5 $\frac{1}{4}$	15 $\frac{1}{2}$	28 $\frac{1}{2}$	...	6+5	...	Caucasus	H. R. H. le Duc d'Orléans.



Antlers of Eastern Red Deer, from the Carpathians, in the Powerscourt Collection.

N. AFRICAN RED DEER (*Cervus elaphus barbarus*).For characters, see *Cervus elaphus*.

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
38 $\frac{7}{8}$	5 $\frac{3}{8}$	...	...	...	6+5	North Africa	Sir Edmund G. Loder, Bart.
36 $\frac{1}{2}$	4 $\frac{3}{4}$	22 $\frac{7}{8}$	28 $\frac{3}{4}$	...	4+4	Do.	British Museum.
36 $\frac{3}{8}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	25 $\frac{5}{8}$	...	4+4	Do.	Do.
30 $\frac{1}{2}$	3 $\frac{3}{4}$	...	...	...	4+3	?	Duke of Bedford.



Head of Hangul.

HANGUL or KASHMIR STAG (*Cervus cashmirianus*).

In this very distinct species the first or brow-tine arises at a considerable distance above the burr, or coronet, of the antlers, instead of close to it, as in the red deer; the bez-tine is usually longer than the brow; the total number of points is generally only five aside, although a third tine may occasionally be added to the normal terminal pair, thus forming an imperfect cup; and the beam of each antler is much curved in towards the middle line of the head. The terminal fork is placed obliquely. The tail is short, and not included in the light patch on the buttocks, which is very small; and the tuft on the hind cannon-bone is situated lower down than in the red deer,

In winter the general colour of the coat is brown, brownish ash, or liver-colour, with the hairs speckled; the light area on the inner side of the buttocks being dirty white, with a blackish line on the inner sides of the thighs, the upper side of the tail black, and the lips, chin, and inner surface of the ears white or whitish. In the fawns the spotting is stated to remain much longer than in the red deer. In the pairing season the old stags squeal like a wapiti, instead of roaring in the red-deer fashion.

The hangul inhabits the forest districts of the north side of the vale of Kashmir and some of the neighbouring valleys, at elevations ranging from 9000 to 12,000 feet in summer, but descending to about 5000 feet in winter. The height at the shoulder varies from about 4 feet to 4 feet 4 inches; the average weight being about 450 lbs.

The finest pair of antlers of which Mr. A. O. Hume has any record were given by Raja Gulab Sing to Colonel King, then commanding the 14th Dragoons. On his death they passed to Captain Prettyjohn of the same regiment. What became of these antlers Mr. Hume was never able to ascertain, but he measured them at Meerut in 1852 or 1853, and the record stands, R. 52, L. 53 $\frac{1}{2}$, measured along the curve inside. Girth 10 inches at burr, and 7 half-way between bez and trez tines. They were a very wide-branching, symmetrical pair.

Length on out-side curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-48 $\frac{1}{8}$	7 $\frac{1}{2}$	14	33	7+5	Sidar Valley . .	K. S. Laurie.
-48	...	...	...	...	Kashmir . .	The late Dr. Leith Adams.
-47	7 $\frac{5}{8}$	21	36	7+5	Do. . .	Bombay Natural History Society.
47	6 $\frac{3}{4}$	21 $\frac{1}{4}$	36 $\frac{3}{4}$	5+5	Do. . .	Sir Edmund G. Loder, Bart.
47	6 $\frac{1}{4}$	30	35 $\frac{1}{2}$	8+8	Do. . .	Duke of Wellington.
-47	...	...	...	...	?	Lieut.-Col. A. E. Ward.
45 $\frac{7}{8}$	8	35	41	6+6	Kashmir . .	(British Museum) Hume Collection.
45 $\frac{5}{8}$	6	25 $\frac{3}{4}$	36	8+8	Do. . .	Sir Victor Brooke's Collection.
45	6 $\frac{3}{4}$	19	34	6+6	Do. . .	Major-Gen. Sir R. Pole-Carew, K.C.B.
-44 $\frac{3}{4}$	6	20	43	5+5	Lidar Valley . .	Queen's Own Corps of Guides.
-44 $\frac{5}{8}$	6 $\frac{1}{2}$	31 $\frac{1}{2}$	44 $\frac{3}{4}$	5+5	Kishenganga Valley	Do.
44 $\frac{1}{2}$	6	27 $\frac{3}{4}$	38 $\frac{3}{4}$	4+4	Sind Valley . .	J. V. Phelps.
44	7 $\frac{1}{4}$	30 $\frac{3}{4}$	40 $\frac{3}{8}$	5+5	Do. . .	P. H. G. Powell-Cotton.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
44	6 $\frac{3}{4}$	23 $\frac{1}{4}$	36 $\frac{1}{2}$	5+5	Sind Valley . .	Naval and Military Club.
44	6	27	36	5+5	Kashmir . . .	Hon. Walter Rothschild.
-44	...	32	45	...	Do. . . .	R. Wahrmann.
43 $\frac{7}{8}$	5 $\frac{7}{8}$	15 $\frac{7}{8}$	32	5+5	Do. . . .	Hon. Charles Ellis.
43 $\frac{3}{4}$	5 $\frac{7}{8}$	18 $\frac{1}{2}$	29	5+5	Do. . . .	C. H. Smith.
43 $\frac{3}{8}$	6 $\frac{1}{2}$	25 $\frac{3}{8}$	36 $\frac{1}{2}$	...	Do. . . .	Hon. Charles Ellis.
43	6	20	35	6+5	Sind Valley . .	A. O. Hume.
43	5 $\frac{7}{8}$	26 $\frac{1}{8}$	37 $\frac{7}{8}$	6+5	Kashmir . . .	Martyn Kennard.
43	5 $\frac{1}{4}$	19 $\frac{3}{4}$	34 $\frac{1}{2}$	6+6	?	Captain F. W. H. Walshe.
-42 $\frac{1}{4}$	6	38	37 $\frac{1}{2}$	6+8	Kashmir . . .	Dr. Albert von Stephani.
42	4 $\frac{1}{2}$	13 $\frac{1}{4}$	29 $\frac{1}{4}$	5+5	?	Duke of Bedford.
42	5 $\frac{3}{4}$	13 $\frac{1}{2}$	26 $\frac{1}{2}$	5+5	Kashmir . . .	E. L. Phelps.
41 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	35	5+5	Do. . . .	Major Kingsley Foster.
41 $\frac{1}{2}$	5 $\frac{3}{8}$	7 $\frac{1}{2}$	28	7+5	?	Captain G. P. Campbell.
41 $\frac{3}{8}$	5 $\frac{3}{4}$	23 $\frac{3}{4}$	33	5+5	Kashmir . . .	(British Museum) R. Lydekker.
41 $\frac{1}{4}$	6	15 $\frac{3}{8}$	29	7+6	Tral Valley . .	P. W. Cobbold.
-41	...	...	...	13	Tral Preserve } .	H.H. The Maharaja of Travan- core.
-41	...	...	...	12	Do. }	
-41	6	23	37 $\frac{1}{2}$	...	Kashmir . . .	The late Major W. D. B. Fenton.
40 $\frac{1}{2}$	5 $\frac{3}{8}$	31 $\frac{1}{2}$	39 $\frac{1}{2}$	6+5	Do. . . .	Capt. F. W. H. Walshe.
40 $\frac{1}{2}$	6 $\frac{1}{2}$	15 $\frac{1}{2}$	28	5+5	Do. . . .	Sir Robert Harvey, Bart.
40 $\frac{1}{4}$	7 $\frac{3}{8}$	24 $\frac{1}{2}$	3	5+5	Do. . . .	Capt. H. W. Codrington.
40	5 $\frac{7}{8}$	32 $\frac{3}{4}$	39 $\frac{1}{4}$	5+5	?	E. J. Mardon.
40	5 $\frac{1}{8}$	16 $\frac{3}{4}$	30	5+5	?	A. Ezra.



Skull and Antlers of Yarkand Stag. From Mr. A. O. Hume's specimen.

YARKAND STAG (*Cervus yarcandensis*).

This stag, which inhabits the Tarim Valley and Maralbashi in Eastern Turkestan, apparently differs from the hangul by the large and well-defined light rump-patch, which includes the tail ; the general colour (probably in summer) being light fawn. The antlers are usually 5-tined, but by the development of a third snag to the crown may become (as in the figure) 6-tined. They differ from those of the

hangul in that the terminal fork is placed at right angles to the middle line of the head so as to look directly forwards. The fifth tine, which is generally inclined inwards, is larger than the fourth, and the whole upper part of the antler is often bent forwards in a shou-like manner.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
40 $\frac{1}{4}$	5 $\frac{1}{2}$	23 $\frac{3}{4}$	31 $\frac{3}{4}$	...	5+5	Near Maralbashi	A. O. Hume. (See illus- tration.)
40	5 $\frac{1}{2}$	25	31	...	6+5	Maralbashi	E. L. Phelps.
39 $\frac{1}{2}$	6	24 $\frac{1}{2}$	25	...	7+6	Do.	A. O. Hume.
39 $\frac{1}{4}$	5 $\frac{3}{4}$	16 $\frac{1}{2}$	28 $\frac{3}{4}$	...	6+6	Do.	David T. Hanbury.



Skull and Antlers of Shou. From Mr. A. O. Hume's specimen.

SHOU (*Cervus affinis*).

A very large stag with antlers of the general type of those of the hangul, but larger, and with the beam bent suddenly forwards at the trez-tine, so that the upper half overhangs the face, the number of points being usually five; the brow-tine is less constantly longer than the bez. The fifth tine is large and inclined inwards, and the terminal fork looks directly forwards. General colour probably rufous brown, with a light rump-patch in winter.

The habitat of this imperfectly known deer appears to be the districts immediately north of Bhutan, and probably the valley eastwards of Chumbi, which drains northwards into the Sangpo.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
55 $\frac{3}{4}$	6 $\frac{1}{2}$	17 $\frac{1}{4}$	40 $\frac{3}{8}$	7+6	?	A. O. Hume. (See illustration.)
54 $\frac{3}{8}$	6 $\frac{5}{8}$	21 $\frac{5}{8}$	37 $\frac{1}{4}$	5+5	?	British Museum (Dr. Campbell).
55 $\frac{3}{4}$	6 $\frac{7}{8}$	26 $\frac{1}{8}$	44	5+5	?	British Museum (B. H. Hodgson).
53 $\frac{1}{4}$	6 $\frac{7}{8}$	30	45 $\frac{3}{4}$	4+5	?	British Museum (Hume Collection).
-53	9	...	40	5+5	?	The late Col. H. C. B. Tanner.
52	8	...	...	...	?	Hon. Walter Rothschild.
49 $\frac{1}{2}$	7 $\frac{1}{2}$	38	45 $\frac{1}{2}$	5+5	?	Col. J. Biddulph.
48 $\frac{7}{8}$	6 $\frac{1}{2}$	19 $\frac{3}{8}$	38 $\frac{1}{8}$	7+5	?	Sir Edmund G. Loder, Bart.
-48	6	30	42 $\frac{1}{4}$	5+5	Chumbi Valley	Lord Curzon.
-48	6 $\frac{3}{4}$	30 $\frac{3}{4}$	¹ 39	5+5	Tibetan Frontier	H. J. Elwes.
48	6 $\frac{3}{8}$	17	34 $\frac{1}{2}$	6+5	?	H.R.H. le Duc d'Orléans.
47 $\frac{7}{8}$	5 $\frac{5}{8}$	30 $\frac{3}{8}$	40 $\frac{1}{2}$	5+5	?	British Museum.
-43	...	...	...	...	Chumbi Valley	Indian Museum.
41	6 $\frac{1}{4}$	...	...	6+4	?	Duke of Bedford.
39 $\frac{3}{4}$	5 $\frac{3}{8}$	20	31 $\frac{1}{4}$	5+5	?	E. P. Tennant.

¹ Spread.

THOROLD'S DEER (*Cervus albirostris*).

Thorold's deer is of the same approximate dimensions as the hangul, from which it is readily distinguished by the more flattened antlers, which have no bez-tine, and do not curve inwards, but are suddenly bent backwards at the point of origin of the trez ; the total number of points being either five or four. Equally distinctive is the pure white muzzle and chin, the white inner surface of the ears, the reversal of the hair on the middle of the back, so as to form a kind of hump on the withers with the points of the hairs directed towards the neck, the low position and large size of the gland-tuft on the hind cannon-bone, and the shortness of the tail, which is included in the very large straw-coloured area of the buttocks. The general colour of the coat is uniformly dark brown, with the hairs, which are remarkable for their coarse and brittle nature, minutely speckled.

The Tibetan plateau, with perhaps some of the neighbouring parts of Central Asia, is the home of this fine species of deer, which was

originally described by the late Colonel Przewalski under the name given above. Subsequently two examples were obtained by Dr. W. G. Thorold, to the north-east of Lhasa, at an elevation of between 13,000 and 14,000 feet, which, under the impression that they indicated a new species, were named *C. thoroldi* by Mr. W. T. Blanford.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
38½	4½	37	27	5+4	Central Tibet . .	Hon. Walter Rothschild.
38	5½	...	...	5+5	Do. . . .	British Museum.
-36	4½	32	32	5+5	? ¹	Indian Museum.

¹ Bought at Darjiling, thither brought by Tibetans.

ROCKY MOUNTAIN WAPITI (*Cervus canadensis*).

Wapiti are very large deer of the red deer group, easy of recognition by the form of their antlers, which are of great size, carrying, when fully developed, more than five tines, curving backwards, and being much flattened in the upper half. They always have the bez-tine developed, but their most characteristic feature is the great size of the fourth tine, which is larger than either of the others, and with the fifth, which is also long, forms a nearly regular fork; the fourth, fifth, and sixth tines being situated almost in the plane of the portion of the beam immediately below them, so that they more or less completely hide one another when viewed from the front aspect. The brow-tine rises close to the burr, and is nearly as long as the bez. The tail is extremely short; the light rump-patch is very large and includes the tail; the neck and under-parts are blackish; and the general colour of the summer coat is yellowish brown on the upper-parts.

Wapiti (known in America as Elk) range from North America to North-Eastern and Central Asia; the typical form being the Rocky Mountain wapiti (*C. canadensis typicus*). The height at the shoulder is about 5 feet 4 inches, and the weight from 700 to 1000 lbs.

Length on outside curve.	Circumference between bez and trez.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
¹ -70½	...	14½ above burr.	...	...	68	6+6	Olympic Mts., Washington	W. F. Sheard.
-66	60	6+6	Wyoming	J. Darley.

¹ Other antler, 70 in. Photograph and owner's measurements of this particular trophy can be seen at Piccadilly.



Head of Rocky Mountain Wapiti.
Shot by Mr. W. Moncreiffe. For measurements see next page.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
-65	7 $\frac{5}{8}$	...	...	...	40	7+7	Laramie Plains, Wyoming	Schoverling, Daly, and Gales.
-64 $\frac{3}{4}$	...	9 $\frac{3}{4}$	41 $\frac{1}{2}$	49	...	6+7	Wyoming	J. J. Harrison.
64 $\frac{1}{2}$	8	...	31 $\frac{1}{2}$	45	52	7+6	?	Viscount Powers-court.
-64 $\frac{1}{4}$	8	...	...	48	...	7+7	N.W. Wyoming	A. Rogers.
-63 $\frac{3}{4}$	8 $\frac{1}{4}$	...	49 $\frac{1}{4}$	48 $\frac{1}{2}$	...	7+9	North Prong	Frank Cooper.
63 $\frac{1}{2}$	8	...	39	45 $\frac{1}{2}$	52	7+7	Wyoming	H. A. C. Darley.
62	7 $\frac{3}{8}$	...	33 $\frac{1}{4}$	50 $\frac{5}{8}$	...	7+7	Snake River, Colorado	Ernest Farquhar.
61 $\frac{1}{2}$	7 $\frac{1}{2}$	...	...	45	...	6+6	Bighorn Mts., Wyoming	Do.
-61	8	...	...	52	...	6+6	Do.	Sir H. Seton-Karr.
61	8	...	36 $\frac{1}{2}$	46 $\frac{1}{2}$	55	8x8	?	Viscount Powers-court.
60 $\frac{1}{2}$	8 $\frac{1}{4}$	...	...	55	...	7+6	Wyoming	E. Grant.
-60 $\frac{1}{2}$	8 $\frac{1}{2}$	14	...	...	52	9+8	White River	Dall de Weese.
60 $\frac{3}{8}$	7 $\frac{1}{4}$	...	43	46 $\frac{1}{4}$	...	6+6	Wyoming	Major C. C. Ellis.
60	8 $\frac{1}{4}$	...	36	37 $\frac{1}{2}$	45	6+6	Do.	W. Winans.
60	6 $\frac{3}{4}$	...	31 $\frac{1}{2}$	41 $\frac{1}{4}$	44	9+7	?	Viscount Powers-court.
59 $\frac{1}{2}$	7	...	38	48 $\frac{1}{2}$	52	8+7	Wyoming	L. E. Sackville West.
59 $\frac{1}{2}$	8 $\frac{1}{2}$	3	37 $\frac{1}{4}$	47	...	8+8	S.E. Wyoming	His Majesty the King.
59 $\frac{1}{2}$	7 $\frac{1}{2}$	...	...	¹ 45	...	6+6	?	Sir H. Seton-Karr.
59	7 $\frac{3}{4}$	...	39	46	53	9+7	Wyoming	Sutton Timmis.
58 $\frac{1}{2}$	8 $\frac{3}{4}$	...	39 $\frac{3}{4}$	43 $\frac{1}{2}$	53 $\frac{1}{2}$	7+6	?	Viscount Powers-court.
58 $\frac{1}{2}$	...	9 between brow and bez.	...	46 $\frac{1}{2}$	50 $\frac{1}{2}$	10+7	Wyoming	Hon. T. A. Brassey.
-58 $\frac{1}{2}$	8 $\frac{1}{2}$	...	...	44 $\frac{1}{2}$	...	6+6	Do.	J. D. Cobbold.
-58 $\frac{1}{2}$	8 $\frac{1}{4}$	...	48	...	50	6+6	?	F. B. Tolhurst.
58	9 $\frac{1}{16}$	...	42	47 $\frac{1}{4}$	...	7+6	Wyoming	A. H. Straker.
58	7 $\frac{3}{8}$	...	43 $\frac{1}{2}$	49	...	9+8	Do.	W. Moncreiffe.
58	7	...	46	49	51 $\frac{1}{2}$	6+6	?	(See illustration.) Viscount Powers-court.
57 $\frac{3}{4}$	7	...	36	43 $\frac{1}{2}$	47	6+6	?	R. Fleming Crooks.
57 $\frac{1}{2}$	6 $\frac{5}{8}$	...	24 $\frac{1}{4}$	35 $\frac{5}{8}$	...	6+6	Montana	Capt. Abdy.
57 $\frac{3}{8}$	7	...	47	48 $\frac{5}{8}$	...	6+6	Wyoming	Hon. Charles Ellis.

¹ Measured by American Exhibition Committee.

RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
57 $\frac{1}{4}$	...	9 $\frac{5}{8}$	32	42 $\frac{1}{4}$	...	7+7	Wyoming	Sir Humphrey de Trafford, Bart.
57	8 $\frac{1}{8}$	...	35 $\frac{1}{2}$	34	43	6+6	Do.	Viscount Powerscourt.
-57	7 $\frac{1}{4}$	...	...	...	...	7+7	Do.	Count F. Trauttmansdorff.
57	7 $\frac{1}{8}$	..	53	49 $\frac{1}{2}$	61	8+9	Colorado	Sir Edmund G. Loder, Bart.
57	7 $\frac{1}{8}$	...	35 $\frac{1}{8}$	41 $\frac{1}{8}$	...	6+6	Yellowstone Park	British Museum.
-56 $\frac{1}{2}$	6 $\frac{7}{8}$	...	...	...	46 $\frac{3}{8}$	6+6	Two Ocean Pass	President Roosevelt.
56 $\frac{1}{2}$	7 $\frac{1}{4}$	...	37	39 $\frac{1}{2}$	43 $\frac{1}{2}$	7+6	?	Duke of Bedford.
-56	7 $\frac{1}{2}$	11 $\frac{3}{4}$	32 $\frac{3}{4}$	43 $\frac{3}{4}$	46 $\frac{1}{2}$	7+6	?	W. F. Gordon Cumming.
56	7	...	31	39	42 $\frac{1}{2}$	6+7	Wyoming	J. V. Colby.
55 $\frac{5}{8}$	7 $\frac{5}{8}$	...	43 $\frac{1}{4}$	48 $\frac{1}{8}$	...	7+7	Do.	Hon. Charles Ellis.
55 $\frac{5}{8}$	7	...	43 $\frac{1}{2}$	47 $\frac{5}{8}$	...	6+5	Do.	Major G. Dalrymple White.
55 $\frac{1}{2}$	7 $\frac{1}{4}$	...	40	46 $\frac{1}{4}$	50	6+6	Do.	P. B. Vander-Byl.
55 $\frac{1}{2}$	7	..	29 $\frac{1}{2}$	40 $\frac{1}{2}$	45 $\frac{1}{2}$	6+6	Do.	T. P. Kempson.
55 $\frac{1}{2}$	6 $\frac{1}{2}$	...	44	45 $\frac{1}{2}$	...	6+6	?	A. H. Pollen.
55 $\frac{3}{8}$	7 $\frac{1}{8}$	...	46 $\frac{1}{4}$	...	...	7+6	?	St. George Littledale.
55	8 $\frac{1}{4}$	...	...	41 $\frac{1}{4}$	...	6+6	Wyoming	Major Maitland Kirwan.
55	8	...	...	45 $\frac{1}{2}$	...	7+6	Do.	Do.
55	7 $\frac{1}{8}$	...	...	47 $\frac{1}{2}$	...	6+5	Do.	E. N. Buxton.
-55	8 $\frac{1}{2}$	...	53	54 $\frac{1}{2}$	...	17	?	The late Sir H. B. Meux, Bart.
-55	8 $\frac{1}{8}$	...	...	41 $\frac{1}{4}$	...	6+6	?	A. Pendarves Vivian.
55	7 $\frac{1}{2}$	...	38	47	52 $\frac{1}{2}$	7+7	Wyoming	Viscount Powerscourt.
¹ 55	6 $\frac{5}{8}$	...	...	...	...	14	America	Duke of Bedford.
54 $\frac{3}{4}$	6 $\frac{1}{2}$	...	50 $\frac{1}{2}$	51	60	6+6	?	E. S. Crasten.
-54 $\frac{3}{4}$	6 $\frac{1}{4}$	...	39 $\frac{3}{8}$	43 $\frac{1}{2}$	...	6+6	Montana	Count Scheibler.
-54 $\frac{1}{2}$	...	10 $\frac{7}{8}$	...	...	45 $\frac{1}{2}$	8+6	Wyoming	Capt. M. M'Neill.
54 $\frac{1}{2}$	...	...	...	...	...	14	Colorado	Sir Peter Walker, Bart.
54 $\frac{1}{2}$	8	...	34 $\frac{1}{4}$	45 $\frac{1}{2}$	...	6+5	Wyoming	Lieut.-Col. Hon. W. Coke.
54 $\frac{1}{2}$	9	...	...	palmated	...	11+7	Montana (?)	G. Wrey.
54 $\frac{1}{2}$	6 $\frac{3}{4}$	...	28	37	46	6+6	?	F. I. Mitchell.

¹ Shed antlers weighed 20 lbs.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
54 $\frac{3}{4}$	6 $\frac{1}{2}$	...	38 $\frac{3}{4}$	44 $\frac{1}{4}$	...	7+6	Wyoming	E. N. Buxton.
-54 $\frac{1}{4}$	8	...	...	43 $\frac{1}{2}$	...	10+10	Montana	W. A. Tulloch.
54 $\frac{1}{4}$	7 $\frac{5}{8}$	...	49 $\frac{7}{8}$	...	...	9+7	Wyoming	Hon. Walter Rothschild.
-54	8 $\frac{1}{4}$	...	...	...	...	13	Teton Mountains	H. Lennard.
¹ 54	7 $\frac{1}{4}$	...	...	48	...	8+7	Wyoming	Moreton Frewen.
54	6 $\frac{1}{2}$	...	43 $\frac{1}{2}$	44 $\frac{1}{4}$	47 $\frac{1}{2}$	7+7	Do.	H. H. Dutton.
54	7 $\frac{5}{8}$	...	43	42	45	8+7	Do.	P. Niedieck.
54	7 $\frac{1}{4}$	...	...	48	...	7+8	Do.	Moreton Frewen.
54	7	...	29 $\frac{1}{2}$	35 $\frac{1}{2}$	44	7+6	Do.	Sir H. Seton-Karr.
54	7 $\frac{3}{4}$	...	48	44	...	12	?	M. P. Grace.
-53 $\frac{1}{2}$	8	...	43	44 $\frac{1}{2}$	...	8+7	Wyoming	Count E. Hoyos.
-53 $\frac{1}{2}$	6 $\frac{1}{2}$	...	39	42	...	6+6	Do.	Major G. Dalrymple White.
53 $\frac{3}{8}$	7 $\frac{3}{8}$	...	47	49 $\frac{3}{4}$	...	8+7	Do.	Ford G. Barclay.
53	7 $\frac{5}{8}$	13	37 $\frac{1}{2}$	41 $\frac{1}{2}$	51	7+7	?	Hon. Walter Rothschild.
-50 $\frac{1}{2}$	7 $\frac{1}{2}$	...	...	56 $\frac{1}{2}$	58 $\frac{1}{2}$	7+6	Wyoming	Hugh Peel.

¹ Shot by Sir G. Gore, Bart.

WEST AMERICAN WAPITI (*Cervus canadensis occidentalis*).

Apparently very closely allied to the typical Rocky Mountain race, but with the head, neck, and limbs blacker in the winter dress. The antlers show considerable tendency to cupping and palmation, and in some cases the portion above the fifth tine is aborted. The range of this form extends from British Columbia and Vancouver to Oregon, and, it is said, Northern California.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
52	8 $\frac{1}{2}$	...	37	40	...	6+6	Vancouver	Barclay Bonthron.
-49 $\frac{1}{4}$	6 $\frac{1}{2}$	...	38	46 $\frac{1}{4}$	...	10+7	Do.	A. E. Leatham.
-45	7 $\frac{1}{4}$	...	37	37	...	7+8	Do.	Clive Phillipps-Wolley.

THIAN-SHAN WAPITI (*Cervus canadensis songaricus*).

From the typical wapiti this well-marked local race differs by its inferior size, longer body and shorter limbs, and relatively larger antlers; the general colour of the coat being brownish gray in winter. This wapiti inhabits the forest-clad portions of the Southern Altai and Thian-Shan ranges; it was first described by Dr. Severtzoff under the name of *C. maral*, var. *songarica*, and subsequently by Mr. Blanford, on the evidence of detached antlers obtained by the Second Yarkand Mission, as *C. eustephanus*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
¹ -55	8	...	...	...	6+7	Bought at Kashgar .	Earl of Northbrook.
54	7 $\frac{1}{4}$	49	46 $\frac{3}{4}$	50 $\frac{1}{2}$	7+6	Thian Shan . .	P. Church.
53 $\frac{1}{2}$	7 $\frac{1}{4}$	...	...	...	7+7	Do. . . .	Do.
53	6 $\frac{3}{4}$	30 $\frac{1}{2}$	39	46	6+6	Do. . . .	J. V. Phelps.
53	6 $\frac{7}{8}$	46	41	49	8+8	?	Duke of Bedford.
-51	10 $\frac{9}{10}$	...	...	...	...	?	W. T. Blanford.
51	6 $\frac{1}{2}$	39 $\frac{3}{4}$	40 $\frac{3}{4}$	50 $\frac{1}{8}$	6+5	Thian Shan . .	A. Ezra.
51	6 $\frac{3}{4}$	43 $\frac{1}{2}$	44 $\frac{1}{2}$	46 $\frac{3}{4}$	7+6	Do. . . .	St. George Littledale.
50 $\frac{3}{4}$	6	29 $\frac{1}{2}$	38 $\frac{1}{2}$	...	8+7	Altai . . .	Duke of Bedford.
50 $\frac{1}{2}$	9	...	...	...	10+9	Thian Shan . .	P. Church.
50	6	39 $\frac{3}{4}$	43	46 $\frac{1}{2}$	7+6	Do. . . .	J. Hamilton Leigh.
50	7 $\frac{1}{4}$	...	...	...	7+7	Do. . . .	J. V. Phelps.
-49 $\frac{5}{8}$	8	41	42 $\frac{1}{8}$	...	7+7	East Thian Shan .	Paris Museum.
-49	...	...	...	...	6+6	China . . .	Capt. P. Hambro.
48 $\frac{1}{2}$	6 $\frac{1}{4}$	36	33	...	6+6	Altai . . .	Duke of Bedford.
48	6 $\frac{1}{2}$	45	41	55 $\frac{1}{2}$	8+8	Kuldja . . .	Do.
46 $\frac{1}{2}$	6	36	40 $\frac{1}{2}$	43	6+6	?	S. W. Carpenter.
45 $\frac{1}{2}$	6 $\frac{1}{4}$	34 $\frac{1}{2}$	39 $\frac{1}{2}$	47	5+5	Altai . . .	H. J. Elwes.
45 $\frac{1}{2}$	7	27 $\frac{3}{4}$	35 $\frac{3}{4}$	40 $\frac{1}{2}$	7+7	Thian Shan . .	P. B. Vander-Byl.
45 $\frac{1}{4}$	5 $\frac{1}{2}$	42 $\frac{1}{2}$	41 $\frac{3}{4}$	44 $\frac{1}{2}$	6+6	Do. . . .	R. Hayne.
44	6 $\frac{1}{4}$	25 $\frac{3}{4}$	31 $\frac{1}{2}$	46 $\frac{1}{2}$	7+6	C. Asia . . .	Hon. Walter Rothschild.
43 $\frac{1}{2}$	5 $\frac{7}{8}$	34 $\frac{1}{4}$	38	40	6+6	Thian Shan . .	Lord Elphinstone.

¹ Shed antlers bought by the late Sir Douglas Forsyth.



Skull and Antlers of Thian-Shan Wapiti. Shot by Mr. P. Church at Tarbagatai.

SIBERIAN WAPITI (*Cervus canadensis asiaticus*).

Imperfectly known, but said to differ from the last by the form of the antlers (which have frequently more tines), as well as by its inferior stature and lighter winter coat. It inhabits the Northern Altai and Siberia.

MANCHURIAN WAPITI (*Cervus canadensis xanthopygus*).

Antlers of a shorter and stouter type than in the Thian-Shan wapiti, with the fourth tine relatively smaller in immature specimens, and the portion above it less developed at all ages. In the 5-tined antlers of sub-adult stags the tips of the fourth and fifth tines curve towards one another like crabs' claws. General colour in winter brownish gray, in summer reddish brown, with the dark winter mane and under-parts of other wapiti.

Distribution.—Northern Manchuria and Amurland.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
33½	5½	18½	21½	...	6+6	?	H. J. Elwes.
32½	5½	26½	26½	29½	7+6	?	Do.
31½	6	17	25½	29	8+7	?	Duke of Bedford.
31½	5	23½	24	26	6+6	?	Do.
31	4½	26½	25½	30½	6+5	?	Do.

BACTRIAN WAPITI (*Cervus canadensis bactrianus*).

Named on the evidence of a specimen recently living in the Zoological Gardens at Moscow, which was at first regarded as related to the shou, although its wapiti affinities were subsequently revealed by specimens from Tchenkend, the head of one of which is now mounted in the British Museum.

Distribution.—Tchenkend and adjacent districts. The antlers of the British Museum specimen are somewhat malformed, and have therefore not been measured.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
40	6	26½	...	...	6+4	Turkestan	Duke of Bedford.



Antlers of Japanese Sika.

From a specimen presented to the British Museum by Viscount Powerscourt.

JAPANESE SIKA (*Cervus sika*).

The common sika is the typical representative of a small group of deer in which the antlers are shorter and simpler than is usually the case in the red deer group, and have generally four tines, including a trez, but lacking a bez. The coat is spotted, at least in summer, and there is a black-bordered white area in the region of the tail, which is relatively long. In the common sika the tail is white at the tip, but black above for at least some part of its length; and the gland on the hind cannon-bone is covered with white hairs. The coat is chestnut red with numerous white spots in summer, and browner, with no, or only indistinct traces of, spots in winter. These deer are distributed over Northern China, Manchuria, and Japan, and are represented by two closely allied races differing chiefly in size. In the Japanese sika (*C. sika typicus*), which inhabits Japan and Northern China, the height at the shoulder varies from about 2 feet 8 inches to 2 feet 10 inches, whereas in the Manchurian sika (*C. sika manchuricus*) it reaches

3 feet 3 inches. Both races have been acclimatised in English and Irish parks.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Locality.	Owner.
25½	5	17½	4+4	Japan	Sir Douglas Brooke, Bart.
25½	4½	20½	4+4	Do.	Sir Edmund G. Loder, Bart.
22	4	16½	5+4	Bred in Ireland	Sir Victor Brooke's Collection.
21½	3½	16½	10+6	Island of Yezo	Do.
21½	3½	13½	4+4	?	Hon. Walter Rothschild.
18½	3½	...	9	Bred in Ireland	Sir Victor Brooke.
17½	3	16½	4+4	?	Duke of Bedford.
16½	3½	...	4+3	Japan	British Museum.
16½	3	9½	4+3	Bred in Ireland	Hon. John Ward.
15½	2½	9½	4+4	Bred in England	Duke of Bedford.
¹ 15½	2½	14½	4+4	Bred in Ireland	Marquis of Hamilton.
² 15½	...	...	6+5	Do.	Viscount Powerscourt.
15½	3½	12½	4+4	Do.	Hon. R. A. Ward.

¹ Weight 143 lbs. as it fell.

² This stag when killed was estimated to be fifteen or sixteen years old, and had no teeth left.

MANCHURIAN SIKA (*Cervus sica manchuricus*).

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Locality.	Owner.
-26	4½	13½	4+4	Manchuria	Paris Museum.
23	3½	18½	4+4	?	Duke of Bedford.
15½	3	...	4+4	?	Do.

The following specimens are from hybrids between Japanese and Red Deer.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Weight.	Locality.	Owner.
29½	4½	17½	21	5+4	14 st.	?	Viscount Powerscourt.
28½	4½	14½	18	5+4	14 st. clean	?	Do.
26½	4	21½	21	4+4	...	?	Do.

FORMOSAN SIKA (*Cervus taëvanus*).

Nearly allied to the common sika, but distinctly spotted in winter, when the coat retains more or less of the rufous summer-tinge. The dark line down the middle of the back is very strongly marked, there is a more distinct black bar above the white tail-patch, and the limbs are shorter, and the body proportionately longer. The height at the shoulder is about 2 feet 11 inches. This species is confined to the mountains of the island of Formosa.

Length.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
19 $\frac{3}{4}$	3 $\frac{3}{4}$	13	16 $\frac{3}{8}$	4+4	Formosa	British Museum.
19	3 $\frac{1}{4}$	...	...	4+4	Do.	Duke of Bedford.



Peking Sika Stag in summer coat, with the antlers in velvet.
Photographed by the Duchess of Bedford.



Head of Peking Sika, from a specimen at Woburn Abbey.

PEKING SIKA (*Cervus hortulorum*).

In addition to its larger size (between 3 feet 7 inches and 4 feet at the shoulder), this species is distinguished from the Manchurian sika by the hairs covering the gland on the hind cannon-bone being of the same colour as the rest of the coat in summer and only slightly grizzled in winter, and by the tip of the tail being apparently white. The head and neck are bluish gray, and in immature animals spots persist in the winter coat, although these disappear completely at this season in fully adult bucks, whose coats become very long and shaggy, especially on the throat and neck. Hinds are more brightly coloured in winter than the stags, and retain distinct spotting. This deer was first named by the late Consul Swinhoe from an immature buck and doe taken at the sack of the Summer Palace, Peking, and was afterwards

obtained in the wild state in the Ussuri district of North-Eastern Manchuria, when it received the name of *C. dybowskii*. In the typical Manchurian race (*C. hortulorum typicus*) there is no dark line down the back; but this is present in the smaller southern race (*C. hortulorum kopschi*) of the Yang-tse valley.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
32 $\frac{1}{4}$	4 $\frac{1}{2}$	16 $\frac{1}{2}$	23 $\frac{1}{2}$	4 + 4	(Shed horns) . .	Duke of Bedford.
32	4 $\frac{1}{4}$	27	24 $\frac{3}{8}$	4 + 4	(See illustration)	Do.
31 $\frac{1}{2}$	5 $\frac{1}{4}$	27 $\frac{1}{8}$	26 $\frac{3}{4}$	4 + 4	?	Sir Edmund G. Loder, Bart.
29 $\frac{5}{8}$	4 $\frac{3}{8}$	27 $\frac{3}{4}$	21	5 + 5	?	W. Banks.
27 $\frac{1}{2}$	4 $\frac{3}{8}$	16 $\frac{1}{2}$	19 $\frac{1}{4}$	4 + 4	?	A. Hardcastle.
27	4 $\frac{1}{8}$	23 $\frac{1}{2}$	20	4 + 4	Manchuria . .	Hon. Walter Rothschild.
26	3 $\frac{3}{4}$	18	15 $\frac{1}{2}$	4 + 4	Do. . .	E. P. Tennant.
24	4	22 $\frac{1}{2}$	19	4 + 4	Do. . .	Hon. Walter Rothschild.
23 $\frac{1}{2}$	3 $\frac{1}{2}$	18 $\frac{1}{4}$	16 $\frac{1}{2}$	4 + 4	Do. . .	Duke of Bedford.
15 $\frac{3}{8}$	3	20	...	4 + 4	Ussuri, Manchuria .	British Museum.



Head of Fallow Deer Buck, from a specimen belonging to Mr. J. Whitaker of Rainworth.

FALLOW DEER (*Cervus dama*).

Antlers normally without a bez, but with a trez-tine, above which the beam is palmated, with numerous snags on the hinder edge. Coat spotted with white in summer (except in the black breed), with a black-bordered white area in the neighbourhood of the long tail. Height at shoulder about 3 feet; weight about 140 lbs. clean. The original distribution includes Greece, Spain, Portugal, Anatolia, Rhodes, Sardinia, Asia Minor, Northern Palestine, and North-Western Africa, but the species has been introduced into Great Britain and some other countries. In Asia Minor wild fallow deer are found along the south coast as far as Adana, and at one spot in the interior.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
32	4 $\frac{1}{8}$	18	28	12 + 10	5 $\frac{1}{4}$	Woburn	Duke of Bedford.
¹ -31	5	...	...	30	7	?	Sir Victor Brooke's Collec- tion.
² -30	4 $\frac{3}{4}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	10 + 9	4 $\frac{1}{2}$	Drummond Castle, Perth	J. G. Millais.

¹ Recorded by J. G. Millais (*British Deer and their Horns*).

² Weight of antlers, 8 lbs. 1 oz. on skull, no lower jaw (Millais, *op. cit.*).

Length on out- side curve.	Circum- ference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
30	4	19 $\frac{1}{4}$	24	11 + 11	6	?	D. M'Douall.
-30	4 $\frac{1}{2}$	22	37 outside	16 + 10	7	Drummond Castle, Perth	J. G. Millais.
-29 $\frac{1}{2}$	5	17	28 $\frac{1}{2}$	14 + 13	7 $\frac{1}{4}$	Petworth Park	Do.
29 $\frac{1}{4}$	4 $\frac{1}{8}$	...	...	14 + 11	8	Woburn	Duke of Bedford.
-28 $\frac{1}{2}$	4	15 $\frac{1}{4}$	23	9 + 8	5 $\frac{3}{4}$	Essex	W. H. Wilson.
28 $\frac{1}{2}$	4 $\frac{1}{8}$	18	24 $\frac{3}{4}$	8 + 6	4	New Forest	E. Festus Kelly.
¹ -28 $\frac{1}{2}$	4	14 $\frac{1}{2}$	26	10 + 11	6	Woburn Park	Duke of Bedford.
² 28 $\frac{1}{2}$	4	(Span 34) outside	19	6	6	Colebrooke	Sir Victor Brooke's Collec- tion.
³ 28	4	(26)	18	5	5	Do.	Do.
⁴ -27 $\frac{3}{4}$	5	20 $\frac{1}{2}$	21 $\frac{1}{2}$	13 + 7	5 $\frac{3}{4}$	Do.	A. Basil Brooke.
27 $\frac{3}{4}$	4 $\frac{1}{4}$	32 $\frac{1}{2}$	25	11 + 10	...	Woburn Park	Duke of Bedford.
27 $\frac{1}{4}$	4	23	...	10 + 8	...	England	J. Carr Saunders.
-27	...	...	...	...	...	Nr. Blair Castle	Dowager Duchess of Atholl.
26 $\frac{7}{8}$	3 $\frac{3}{4}$	12	17 $\frac{1}{2}$	10 + 7	...	?	British Museum.
-26 $\frac{1}{2}$	4 $\frac{1}{4}$	23 $\frac{1}{2}$	20 $\frac{1}{2}$	9 + 7	5 $\frac{7}{8}$	Perthshire	A. Basil Brooke.
-26	5	20 $\frac{3}{4}$	23 $\frac{3}{4}$	10 + 10	4 $\frac{1}{2}$	Tasmania	T. W. H. Clarke.
-26	5 $\frac{1}{4}$	20	22 $\frac{1}{2}$	11 + 13	7	Ashton Park	J. Whitaker.
⁵ 25 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{3}{4}$	24 $\frac{1}{4}$	10 + 10	6	Surrenden Park	W. Winans.

¹ Weight dressed, 165 lbs.² Seven years old, as he fell 237 $\frac{1}{2}$ lbs., 198 lbs. cleaned.³ Seven years old, as he fell 224 lbs. (Millais, *British Deer*).⁴ Seven years old.⁵ Weight 222 lbs.



Antlers of Mesopotamian Fallow Deer, from a specimen in the British Museum.

MESOPOTAMIAN FALLOW DEER (*Cervus mesopotamicus*).

Larger and brighter coloured than the common fallow deer, with the spots near the middle of the back tending to form longitudinal stripes, and the tail wholly white. Antlers of a totally different type, being somewhat expanded at the origin of the trez-tine (which is large, and situated some distance above the short brow-tine), but at the summit only moderately flattened, and breaking up on the hinder border into several snags. Weight about 24 stone, clean (H. E. Whittall).

Distribution.—The mountains of Luristan in Mesopotamian Persia.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
-36½	4¾	16¾	...	12 + 15	5¾	Karabogha, Asia	F. E. Whittall.
-29	4½	30½	24½	10 + 11	5½	Minor Asia Minor . .	Do.
-21¼	3½	14½	...	9 + 7	...	Do. . .	Paris Museum (Abbé David).
20¼	5	14	...	6 + 5	...	Luristan Mountains	Sir Edmund G. Loder, Bart.



Skull and Antlers of extinct Giant Irish Deer (Irish Elk).

GIANT IRISH DEER (*Cervus giganteus*).

(Commonly called "Irish Elk.")

A huge deer, probably standing at least 6 feet at the shoulder, with the antlers enormously expanded, and carrying several large tines on the front border, of which the one above the trez is the longest; the brow-tine being often flattened and forked. In its typical form this magnificent deer occurs in the prehistoric deposits of Ireland, England, and probably some of the western districts of the Continent.

Spread Tip to Tip.		Length round inside of antler.		Length of both antlers across skull.		Circum- ference above burr.	Width of Palm.	Points.	Owner.
ft.	in.	ft.	in.	ft.	in.				
-11	6	...	...	...	...	...	20	...	Marquis of Londonderry.
-11	5	6	3	...	...	9 $\frac{3}{4}$	17	11 + 11	Dublin Museum.
-11	3	7	5 $\frac{1}{2}$	...	...	12 $\frac{1}{4}$	19 $\frac{1}{4}$	17	Mrs. Donaldson-Hudson.
-11	1 $\frac{1}{2}$	6	9 $\frac{1}{2}$	...	...	9 $\frac{1}{4}$	16 $\frac{1}{2}$	23	Sir Peter Walker, Bart.
-10	4 $\frac{1}{2}$	6	9	13	10	12	20	...	Earl of Bessborough.
10	2	5	8 $\frac{1}{2}$	...	...	9 $\frac{7}{8}$	19 $\frac{1}{4}$	19	British Museum.
-10	2	...	...	...	...	...	...	...	Thomas Bate.
9	8	...	...	...	...	...	20	12 + 11	Hon. Walter Rothschild.

RECORDS OF BIG GAME

Spread Tip to Tip.	Length round inside of antler.	Length of both antlers across skull.	Circum- ference above burr.	Width of Palm.	Points.	Owner.
ft. in.	ft. in.	ft. in.				
9 5	6 2	12 5	11	21 $\frac{1}{4}$	11 + 11	Viscount Powerscourt.
9 5	6 0	12 10	13 $\frac{1}{2}$	21 $\frac{1}{8}$	15 + 13	Sir Edmund G. Loder, Bart.
9 3	6 2	13 5	10	24	12 + 10	Duke of Westminster.
9 2	...	13 6	...	15 $\frac{1}{2}$	...	Mrs. Graham Lloyd.
-9 2	...	11 10	10 $\frac{1}{4}$	22 $\frac{1}{4}$	9 + 9	Dublin Museum.
-9 2	...	...	...	...	20	Thomas Bate.
8 11 $\frac{3}{4}$	6 1 $\frac{3}{8}$	...	8 $\frac{3}{4}$	17 $\frac{3}{4}$	10 + 13	Hon. Charles Ellis.
8 11	5 10	...	11 $\frac{1}{4}$	17	9 + 9	Viscount Powerscourt.
8 10	5 9	11 9 $\frac{1}{2}$	9 $\frac{1}{4}$	17	12 + 11	Duke of Westminster.
-8 10	...	12 10	...	13 $\frac{1}{2}$	...	Mrs. Graham Lloyd.
-8 9	...	...	...	18 $\frac{1}{4}$	9 + 8	H. J. Elwes.
8 7	5 9 $\frac{1}{2}$	...	10	20	12 + 12	Viscount Powerscourt.
7 6	5 3 $\frac{1}{2}$	...	8 $\frac{1}{8}$	...	10 + 11	Sir Victor Brooke's Collection.



Antlers of Indian Sambar.
From a specimen in the British Museum.

INDIAN SAMBAR (*Cervus unicolor*).

The typical representative of the Rusine group of deer, in which the antlers are rounded and three-tined, both the bez and trez being wanting, and the summit of the beam simply forked. Height reaching to 5 feet 4 inches at the shoulder. Antlers large and rough, with the brow-tine given off at an acute angle to the beam, and the two terminal tines of nearly equal length. Hair coarse and shaggy, uniformly dark umber-brown, with some chestnut on the buttocks, at all ages. Face-glands very large, and capable of being turned inside out. Ears large, and the tail relatively long and bushy. Young uniformly coloured. Weight about 600 lbs., when cleaned about 410 lbs. The wooded hilly districts of India and Ceylon form the habitat of the true sambar, which probably extends into Assam.

The largest, or rather longest, pair of antlers known were from the Central Provinces, and measured 48 inches along the curve inside (=nearly 50 inches on outside curve). Both brow-tines were broken off. They were sent to Mr. A. O. Hume by Mr. R. Blewitt.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ -50 $\frac{1}{8}$	9 $\frac{3}{8}$	24	...	3+3	Bhopal . . .	The late Sultan Dulah Nawab Ahmedali Khan.
48	7	Single shed specimen		3	Khandesh . . .	R. H. Madan.
-47 $\frac{3}{4}$	...	...	28 $\frac{1}{2}$	...	Cent. Provinces . . .	A. P. Perceval.
-46 $\frac{7}{8}$	...	49	...	3+3	Do. . . .	R. Wordsworth.
46 $\frac{1}{2}$	6 $\frac{3}{8}$	24 $\frac{1}{8}$	30 $\frac{7}{8}$	3+3	Do. . . .	A. O. Hume.
-46 $\frac{1}{2}$	...	45	...	...	Garhwal . . .	R. M. Nash.
-45 $\frac{1}{4}$	7 $\frac{1}{4}$	38	42 $\frac{1}{2}$	3+3	Sangor, C.P. . .	Lieut.-Colonel R. W. Mapleton.
45 $\frac{1}{8}$	6 $\frac{5}{8}$	17 $\frac{3}{4}$	32 $\frac{1}{8}$	3+3	?	British Museum (Dr. H. Falconer).
45	7 $\frac{3}{8}$	22 $\frac{1}{2}$	33 $\frac{3}{4}$	3+3	Mayoghur, Cent. Provinces	Sir John Morris.
45	7 $\frac{1}{4}$	44 $\frac{7}{8}$	...	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
² -45	...	...	...	...	Cent. Provinces . .	Bombay Natural History Society.
-45	9	...	...	...	Orissa . . .	H.H. The Maharaja of Travancore.
-45	8	Picked up by Dr. G. Jones	...	...	Cent. Provinces (?) .	Heighway Jones.
44 $\frac{1}{8}$	7 $\frac{7}{8}$	44 $\frac{3}{8}$	45 $\frac{1}{4}$	3+3	Rangeer, Do. . .	Col. W. J. Morris.
-44	...	34	...	3+3	Cent. Provinces . .	J. D. Inverarity.
³ -44	9	...	...	...	Rewa . . .	Lieut.-Col. A. E. Ward.
44	6	9 $\frac{1}{4}$	24 $\frac{3}{8}$	3+3	Do. . . .	Major C. F. Pinney.
44	6 $\frac{7}{8}$	19 $\frac{1}{4}$	31 $\frac{1}{4}$	3+3	Do. . . .	H. E. M. Davies.
43 $\frac{5}{8}$	5 $\frac{5}{8}$	Single horn		3+3	Do. . . .	British Museum (Hume Collection).
43 $\frac{1}{2}$	5 $\frac{1}{4}$	17	28	3+3	Do. . . .	Sir E. P. Bates.
43 $\frac{1}{2}$	6 $\frac{3}{4}$	25 $\frac{1}{4}$	34	3+3	Cent. Provinces . .	Viscount Powerscourt.
43 $\frac{3}{8}$	6 $\frac{1}{4}$	20 $\frac{3}{8}$	29 $\frac{1}{8}$	3+3	Do. . . .	Sir Robert Harvey, Bart.
-43 $\frac{1}{4}$	...	...	...	3+3	Do. . . .	Capt. C. Hutton Dowson.

¹ Recorded in *Asian* by Major L. Impey.

² This is the measurement of only a portion of a Sambar antler, and was recorded in the *Journal of the Bombay Natural History Society*, iii. p. 228. The animal was shot by Mr. R. Gilbert in the Central Provinces, but got away minus this piece of his antler.

³ Height at shoulder, 35 $\frac{1}{2}$ inches.

Length on outside curve.	Circum- ference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
43	6	24½	30	3+3	Khandesh . . .	A. Cumine.
-43	9½	26	23	3+3	Cent. Provinces . .	Capt. J. H. Gwynne.
-42¾	8½	20	...	7+5	Do. . .	Bertram-Carey.
42¾	5¾	26	32¼	3+3	Do. . .	A. H. Pollen.
42½	6½	15	27¾	4+4	Ghats of Simrol . .	British Museum (Col. J. Evans).
-42	6¼	Single antler	...	...	?	Sir Edmund G. Loder, Bart.
41¾	6½	33½	35½	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis.
41¾	7	28½	34¾	3+3	?	Hon. Walter Rothschild.
41½	7½	27½	...	3+3	Cent. Provinces . .	Lord Charles Bentinck.
41½	6½	30½	36½	4+4	Do. . .	P. Jay.
41	6¾	18½	29	3+3	Do. . .	Duke of Bedford.
¹ -41	8½	...	...	3+3	N. Gujerat . . .	S. C. Law.

Ceylon Specimens.

Length on outside curve.	Circum- ference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Owner.
32½	6½	24	26½	3+3	A. R. Hay.
31½	5	20	17	4+3	Major G. E. Hale.
-30	8?	21½	19¾	3+3	J. Ryan.
29	4½	25	22¼	3+3	Earl Cairns.
27¼	4½	16¾	20	3+3	A. M. Naylor.

¹ Height at shoulder, 52 inches.



Skull and Horns of Indian Sambar with abnormal Antlers. From a specimen in the possession of Mr. Bertram-Carey.



Frontlet and Antlers of Malay Sambar.
Drawn from a Burmese specimen in the British Museum.

MALAY SAMBAR (*Cervus unicolor equinus*).

This local race is nearly as large as the Indian sambar, but the antlers are generally shorter and thicker, with the hinder or inner tine of the terminal fork much shorter than the front one, and arising as a spur from the inner hind margin of the beam, of which the front tine forms the direct continuation; the brow-tine is also generally longer. General colour of coat of adult darker, usually a light ring round the eyes, the ears smaller, often with a white margin, and the tail very bushy. Young spotted. The distributional area extends from Assam and Cachar through Burma and the Malay Peninsula to Siam, Hainan, Borneo, and perhaps Sumatra.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-32 $\frac{1}{2}$	7 $\frac{1}{2}$	24 $\frac{7}{8}$	27 $\frac{1}{4}$	3+2	Burma . . .	Lieut.-Col. O. E. P. Lloyd.
-32	...	10	...	...	Do. . . .	Major W. Anstruther Thom- son.
-31 $\frac{1}{2}$	6	24 $\frac{3}{4}$	26	3+3	Do. . . .	B. Lentaigne.
31	6 $\frac{3}{8}$	14 $\frac{1}{4}$	18 $\frac{1}{4}$	3+3	?	G. Monteath.
30 $\frac{7}{8}$	6 $\frac{1}{2}$	17 $\frac{1}{4}$	19 $\frac{5}{8}$	7+7	Borneo . . .	Sir Edmund G. Loder, Bart.
-30 $\frac{1}{2}$	5 $\frac{1}{8}$	27 $\frac{3}{4}$	¹ 30	3+3	Burma . . .	Capt. G. H. Evans.
-30 $\frac{1}{4}$	...	25	21	3+3	Mogong, Burma .	H. A. Kelso.
30 $\frac{1}{8}$	4 $\frac{3}{8}$	20 $\frac{3}{4}$	21 $\frac{1}{4}$	3+3	Burma . . .	British Museum.
-29 $\frac{7}{8}$	6 $\frac{3}{4}$	18	...	4+3	Manipur . . .	Capt. A. Wilson.
27 $\frac{1}{2}$	4 $\frac{1}{2}$	24 $\frac{1}{2}$	20 $\frac{1}{2}$	3+3	Burma . . .	A. E. English.
25	5 $\frac{1}{2}$	14 $\frac{5}{8}$	16 $\frac{1}{2}$	3+3	Do: . . .	Hon. Walter Rothschild.
24 $\frac{3}{4}$	5 $\frac{1}{2}$	14	15	3+3	? ¹ Outside.	Duke of Bedford.

FORMOSAN SAMBAR (*Cervus unicolor swinhoei*).

This race is very closely related to the preceding, from which it is distinguished by its shorter head, concave profile, longer limbs, and certain differences in colour; the lower part of the legs being brownish or whitish yellow, and the bushy tail black all round. It is confined to the island of Formosa.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Points.	Owner.
19 $\frac{3}{4}$	...	9	3+3	British Museum.
17	4 $\frac{1}{4}$	...	5	Duke of Bedford.
16 $\frac{1}{8}$	3 $\frac{5}{8}$	16	3+3	British Museum.
13 $\frac{5}{8}$	4 $\frac{3}{4}$	13 $\frac{1}{8}$	4+4	Do.

LUZON SAMBAR (*Cervus unicolor philippinus*).

Nearly allied to the two last, the height at the shoulder being probably from 33 to 35 inches, the build stout and massive, with the hind-quarters specially elevated, and the form that of a small Malay sambar. On the head is a blackish streak starting from over each eye

to form a line down the middle of the face separated by a band of pale fawn from a moustache-like dark mark in the muzzle.

Distribution.—The island of Luzon, in the Philippines; introduced into the Marianne islands, specimens from which have been described as a separate species under the name of *C. mariannus*.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
21	4 $\frac{3}{4}$	5 $\frac{1}{2}$	3+3	Luzon . .	Sir Edmund G. Loder, Bart.
19 $\frac{5}{8}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	4+4	Do. . .	British Museum.
18 $\frac{7}{8}$	5 $\frac{1}{4}$	9 $\frac{3}{4}$	3+5	Do. . .	Do.
18 $\frac{3}{8}$	5 $\frac{1}{8}$	14 $\frac{3}{4}$	4+3	Do. . .	Do.
18	4 $\frac{5}{8}$	13	4+4	Do. . .	Do.
16	4	10 $\frac{1}{2}$	3+3	Do. . .	Sir Edmund G. Loder, Bart.
15 $\frac{1}{8}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$	3+3	Do. . .	British Museum.

BASILAN SAMBAR (*Cervus unicolor nigricans*).

Smaller than the last, the height at the shoulder in a mounted specimen in the British Museum being 27 inches. Detached antlers indicate, however, larger animals.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
13 $\frac{1}{2}$	4 $\frac{3}{8}$	12 $\frac{1}{8}$	3+3	Basilan Island . . .	British Museum (A. H. Everett).
13 $\frac{1}{4}$	4 $\frac{1}{2}$	11 $\frac{5}{8}$	3+3	Do. . .	Do.

SZECHUAN SAMBAR (*Cervus unicolor dejeani*).

A large race from Northern China, with very massive antlers, which show a tendency to develop small supplemental snags.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
31	6	22	24 $\frac{1}{2}$	3+3	N.W. China . .	Hon. Walter Rothschild.
30 $\frac{3}{8}$	5 $\frac{1}{2}$	15 $\frac{3}{8}$	18 $\frac{1}{2}$	3+3	Ta-tsien-lou Szechuan	Paris Museum (type specimen).



Skull and Antlers of Javan Rusa.
From a specimen in the British Museum.

JAVAN RUSA (*Cervus hippelaphus*).

General form, coat, and colour sambar-like ; but the ears smaller, the tail thin, the hairs on the back banded with coloured rings, and the under-parts, chin, and inner sides of buttocks whitish. Antlers comparatively slender and only moderately rough, with the brow-tine medium or short, and making a large acute angle with the beam ; the hinder or inner tine of the terminal fork much longer than the front or outer one, and forming the continuation of the beam, from the

front or front outer surface of which the front tine arises as an offshoot; the two antlers enclosing a lyrate space. Young, uniformly coloured. There are two races of this species—one the Javan rusa (*C. hippelaphus typicus*) of the approximate size of a red deer, and the other the Moluccan rusa (*C. hippelaphus moluccensis*), from Celebes and the Moluccas, said to be smaller, and without a distinct mane on the neck or tuft to the tail.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
37½	5½	16	17¾	3+3	Java . . .	H.R.H. Prince of Wales.
-36	...	11½	...	3+3	Mauritius (introduced)	Admiral Sir William Kennedy.
35½	4½	22¾	...	3+3	Java . . .	Sir Victor Brooke's Collection.
35¼	4½	17½	17	3+3	Do. . . .	Hon. Walter Rothschild.
34½	4½	17¼	22¼	3+3	Do. . . .	Capt. C. Keppel, R.N.
¹ 34	...	...	...	...	Rodriguez (introduced)	Admiral Sir William Kennedy.
33	4½	25½	...	3+3	Java . . .	Duke of Bedford.
-30¼	42	17½	...	...	?	Major W. Anstruther Thomson.
28¼	4½	11½	12½	3+3	Do. . . .	Sir Edmund G. Loder, Bart.

¹ Weight 269 lbs.

MOLUCCAN RUSA (*Cervus hippelaphus moluccensis*).

(See above).

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
36½	4½	18½	3+3	?	Sir Edmund G. Loder, Bart.
27½	4½	14½	3+3	?	Duke of Bedford.
14½	3½	...	3+3	?	Do.
8½	4	5½	...	Batchian . .	British Museum (A. R. Wallace).
6½	3½	5½	...	?	British Museum.

BAVIAN DEER (*Cervus kuhli*).

A small deer allied to the Javan rusa (*C. hippelaphus*), standing about 27 inches at the shoulder, of light build, and of a uniform brown colour, without a dark stripe down the back.

Distribution.—The Bavian Islands, between Borneo and Java.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Owner.
9¾	2½	10¾	10¾	3+3	British Museum.



Head of Male Hog-Deer.

HOG-DEER or PARA (*Cervus porcinus*).

Allied to the Bavian deer, but the antlers larger, the build longer and lower, and the summer coat of the adult, as well as that of the young, spotted with yellowish white. General colour in winter rufous or yellowish brown, somewhat speckled above, and much darker beneath; in summer, upper-parts paler and more or less spotted. Antlers on long pedicles, with the hinder tine of the terminal fork the shorter. Height at shoulder from about 25 to 29 inches. Weight about 90 to 100 lbs. The largest pair of antlers known belonged to a specimen shot by Mr. A. O. Hume in the Ganges Khadir, near Meerut. They measured 20 along the beam inside, and had a mid-beam girth of 3.5. The specimen was destroyed in the Mutiny, the house in which it was hung having been burnt.

Distribution.—India, throughout the Indo-Gangetic plain from Sind and the Punjab to Assam, thence through Sylhet to Burma and Tenasserim.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Locality.	Owner.
-23½	3½	12½	Burma	Capt. G. H. Evans.
-21¾	3½	7½	Do.	Do.
-21½	3½	22½	?	Sir Edmund G. Loder, Bart.

Length on outside curve.	Circum- ference above brow tine.	Tip to Tip.	Locality.	Owner.
-21	3 $\frac{1}{2}$	18 $\frac{3}{4}$	Burma . .	Capt. G. H. Evans.
-21	3 $\frac{1}{4}$	15 $\frac{1}{4}$	Pegu . . .	Major-Gen. E. M. Norie.
20 $\frac{3}{8}$	3 $\frac{1}{2}$	22 $\frac{1}{2}$	?	Major W. Anstruther Thomson.
-20 $\frac{1}{2}$	3 $\frac{1}{4}$	12 $\frac{1}{2}$	Burma . .	Capt. G. H. Evans.
-20 $\frac{3}{8}$	3 $\frac{1}{8}$	...	Nepal . . .	Bombay Natural History Society.
-20 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	?	J. Whitaker.
-20 $\frac{1}{8}$	3	9 $\frac{1}{2}$	N.W. Provinces .	J. Nugent.
-20	...	...	Burma . .	Indian Museum (Capt. R. C. Beavan).
-19 $\frac{5}{8}$	3 $\frac{1}{8}$	16	Meerut, N.W.P. .	Capt. W. Q. Winwood.
19 $\frac{1}{2}$	3 $\frac{1}{8}$	13 $\frac{5}{8}$	Dudla Swamp, N.W. Provinces	Capt. W. E. Stobart.
-19 $\frac{1}{2}$	3 $\frac{3}{8}$	...	Nepal . . .	Bombay Natural History Society.
-19 $\frac{3}{8}$	...	...	Ganges Khadir .	Major H. S. King.
19 $\frac{1}{4}$	3 $\frac{1}{8}$	9 $\frac{1}{2}$	Do. . .	A. O. Hume.
19 $\frac{1}{8}$	3 $\frac{1}{4}$	16 $\frac{1}{2}$	Burma . .	Sir Victor Brooke's Collection.
19 $\frac{1}{8}$	3 $\frac{3}{8}$	18 $\frac{3}{4}$	?	H. C. V. Hunter.
-19	4 $\frac{1}{4}$	5 $\frac{1}{16}$	Upper Burma .	C. W. A. Bruce.
-18 $\frac{3}{8}$	4 $\frac{7}{16}$	15	Do. . .	Do.
¹ -18	6 $\frac{1}{2}$	19	Ganges Khadir .	Gen. Sir R. Pole-Carew.
-18	...	...	?	W. Gillman.
17 $\frac{3}{4}$	3	14 $\frac{3}{8}$	?	L. J. Mountford.
17 $\frac{3}{4}$	2 $\frac{3}{4}$	9 $\frac{1}{2}$	Burma . .	A. E. English.
17 $\frac{3}{4}$	3 $\frac{1}{2}$	9 $\frac{1}{4}$	Nepal . . .	British Museum, the late B. H. Hodgson.
-17 $\frac{1}{2}$	...	...	Ganges Khadir .	Major F. D. V. Wing.
17 $\frac{1}{2}$	3 $\frac{1}{8}$	10 $\frac{1}{2}$	?	Guy G. Wilson.
17 $\frac{1}{4}$	3 $\frac{1}{2}$	11	Cooch Behar .	Sir Henry D. Tichborne, Bart.
17 $\frac{1}{8}$	...	9 $\frac{1}{4}$	?	J. Carr Saunders.
-17	3 $\frac{1}{8}$	...	Naini Tal Terai .	Major-General Alexander A. A. Kinloch.

¹ Ten points.



Head of Chital.

CHITAL or AXIS (*Cervus axis*).

This beautiful species is distinguished from all the other members of the Rusine group, except the Philippine spotted deer (*C. alfredi*), by the body being profusely spotted with white at all seasons and all ages; the general colour of the upper-parts being light rufous fawn, with a dark stripe from the nape to the tip of the tail and a black band on the muzzle. Height at shoulder from 36 to 38 inches; live-weight estimated at about 250 lbs. Antlers supported on short pedicles, long, slender, and moderately rough; the brow-tine making nearly a right angle with the beam, and the front tine of the terminal fork, which forms the continuation of the beam, much the longer.

Distribution.—India and Ceylon.

Length on outside curve.	Circumfer- ence above the first point.	Tip to Tip.	Points.	Locality.	Owner.
-38 $\frac{1}{4}$	4 $\frac{3}{4}$	19 $\frac{1}{2}$	3+3	Asirgarh Jungle, Central Provinces	Lieut.-Col. M. Cust.
38	4 $\frac{3}{4}$	18	3+3	East Berar . . .	Brig.-Gen. F. H. Whitby
38	4 $\frac{1}{2}$	22	4+4	?	Col. A. Pollock.
37 $\frac{1}{2}$	3 $\frac{3}{4}$	19	3+3	Siwalik Hills . . .	Capt. B. R. M. Glossop.
37 $\frac{1}{2}$	4 $\frac{1}{2}$	24	5+4	?	F. Pope.
37 $\frac{1}{2}$	4 $\frac{1}{4}$	24 $\frac{3}{8}$	4+4	Bassim, C.P. . . .	A. O. Hume.
37 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{7}{8}$	4+5	?	Sir Victor Brooke's Collection.
36 $\frac{1}{2}$	4 $\frac{1}{2}$	25	4+3	Berar	C. H. Seely.
-36 $\frac{1}{2}$	4 $\frac{1}{2}$	15 $\frac{5}{8}$	4+3	Nepal	A. E. Leatham.
-36 $\frac{1}{2}$	5 $\frac{3}{4}$	19 $\frac{3}{4}$	3+3	Central Provinces .	Capt. M. McNeill.
-36 $\frac{1}{2}$	...	16 $\frac{3}{4}$	4+4	Do.	Major J. H. Gwynne.
36	4 $\frac{1}{4}$	25 $\frac{1}{4}$	3+4	?	British Museum.
-36	5	15	4+3	Mysore	Capt. G. H. Evans.
36	4 $\frac{5}{8}$	21	4+3	?	Major James Grant.
-36	4 $\frac{3}{4}$	26	4+4	Sangor, C. P. . . .	Lieut.-Col. R. W. Mapleton.
35 $\frac{3}{4}$	4	19 $\frac{3}{4}$	3+3	Central Provinces .	Major G. T. M. Bridges.
35 $\frac{1}{2}$	4 $\frac{1}{4}$	18 $\frac{1}{8}$	4+4	?	Sir Edmund G. Loder, Bart.
35 $\frac{1}{2}$	4	12 $\frac{1}{4}$	5+5	?	G. W. Hatch.
35 $\frac{1}{4}$	4 $\frac{1}{8}$	22 $\frac{7}{8}$	3+3	Western Ghats . .	Major-Gen. Sir Arthur Ellis.
-35 $\frac{1}{4}$	4	21	4+4	?	James J. Harrison.
-35	4 $\frac{1}{2}$	...	...	N. Kanara	Bombay Natural History Society.
35	4 $\frac{1}{2}$	20 $\frac{1}{4}$	4+3	Kota, Rajputana . .	Major H. C. Morland.
-35	...	16 $\frac{1}{2}$	...	Mandla, Central Provinces	Capt. B. H. Boucher.
35	4	24 $\frac{1}{4}$	3+3	Nepal	Major G. Roos Keppel.
-34 $\frac{3}{4}$	5 $\frac{5}{8}$	12 $\frac{3}{8}$	4+4	N.W. Provinces . .	Major E. M'K. Williams.
-34 $\frac{1}{2}$	...	22 $\frac{1}{2}$	3+3	Tapti Valley . . .	J. D. Inverarity.
-34 $\frac{1}{4}$	3 $\frac{7}{8}$	...	...	North Kanara . . .	Lieut.-Col. L. L. Fenton.
-31 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{1}{2}$	3+3	Ceylon	Count Scheibler.
31 $\frac{1}{2}$	3	10 $\frac{1}{2}$	3+3	Do.	A. R. Hay.
30 $\frac{1}{2}$	3 $\frac{1}{2}$	10 $\frac{1}{4}$	3+3	Do.	Capt. F. H. Pym.



Head of Swamp-Deer. From a specimen in the possession of Mr. H. C. V. Hunter.

SWAMP-DEER (*Cervus duvauceli*).

This species belongs to the Rucervine group, in which the antlers resemble those of the Rusine section in the absence of the bez and trez tines, but have the beam regularly forked, and each branch again dividing, so that there are at least four tines. There is no gland

on the hind-leg, or only a vestige thereof. In the swamp-deer the antlers are smooth and flattened, with a long brow-tine rising almost at right angles to the beam, which is undivided for about half the total length of the antler, and then splits into a fork, each branch of which is usually simply forked, but sometimes divided in a more complicated manner. General colour bright rufous brown, often speckled near the back. Height at shoulder from 3 feet 8 inches to 3 feet 10 inches; weight about 717 lbs.

Distribution.—India, exclusive of Ceylon.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
41	6½	35½	38	8+5	Central Provinces . .	Capt. W. W. Hancock.
41	5¾	32	37½	8+7	Do. . .	Major C. B. Wood.
41	5½	(one antler broken)		6+6	Do. . .	Major C. S. Cumberland.
39½	5	35½	37½	5+6	Do. . .	Do.
38½	5½	(shed antlers)		6+5	Do. . .	C. F. Egerton.
-38	...	43	...	6+6	Do. . .	J. D. Inverarity.
-38	...	...	...	6+6	Do. . .	Capt. B. H. Boucher.
-37½	...	...	...	6+6	Do. . .	Major H. G. C. Swayne.
37¾	5½	23½	28½	7+6	?	Sir Edmund G. Loder, Bart.
36½	5	...	20 (outside)	23	Mavella District . .	Measured by Lieut.-Col. A. E. Ward.
36	5	29¾	33¾	6+5	Nepal . . .	British Museum (B. H. Hodgson).
36	4½	47	47	6+6	Central Provinces . .	Major C. B. Wood.
-36	...	29	...	6+6	Nepal . . .	J. D. Inverarity.
-36	5½	32½	...	7+7	?	Major W. Anstruther Thomson.
-35½	...	...	...	...	Chutia Nagpur . .	Indian Museum.
-35½	...	...	...	7+6	Kheri District . .	A. Wilson.
35¾	4¾	27	29¾	...	?	Sir Victor Brooke's Collection.
35½	5¾	22½	...	7+6	Nepal . . .	H. C. V. Hunter.
35	4¾	27½	30½	5+5	Terai . . .	Capt. E. B. Cook.
-34¾	...	33	...	12+8	Mymensing . . .	F. B. Simson.
-34½	5½	24¾	28¾	6+5	Nepal . . .	A. E. Leatham.
34½	4¾	10¾	28	9+6	Mandla, Cent. Provinces	Major A. G. W. Malet.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
33½	4¾	28½	32½	5+5	N.W. Provinces . . .	Major Chambers Didham.
32¾	5¼	22¾	26¾	6+5	Assam	A. O. Hume.
32¾	5	33½	35	6+6	Nepal	Sir Robert Harvey, Bart.
32¾	5	27½	...	7+6	Cooch Behar	Lieut.-Col. Henry Streatfeild.
32½	4½	32	33½	5+5	Central Provinces . .	Major E. D. White.
32½	5½	19½	24½	7+7	Nepal	H.R.H. the Duke of Saxe- Coburg and Gotha.
32	4	29	19	4+4	?	Sir H. D. Tichborne, Bart.
30¾	5½	19	24½	8+8	?	J. Carr Saunders.



Head of Swamp-Deer Stag with antlers of an abnormal type.

From the *Proceedings of the Zoological Society* for 1899.



Antlers of Schomburgk's Deer. From a specimen in the British Museum.

SCHOMBURGK'S DEER (*Cervus schomburgki*).

Allied to the preceding, but the antlers smooth, rounded, and more complex; the brow-tine very long, frequently forked, and arising nearly at right angles to the beam, which is very short, compressed, and regularly forked, with each of the main branches about equally developed and again forking in a similar manner to terminate in long cylindrical tines. General colour uniform dark brown. Height at shoulder about 3 feet 5 inches.

Distribution.—The northern districts of Siam.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Owner.
-32½	5½	...	...	12+11	Sir Edmund G. Loder, Bart.
30½	5	15½	33	10+10	British Museum.
29¾	4¾	28¾	31½	10+11	Do.
29½	6	19½	27	6+7	J. Carr Saunders.
28½	5½	11	29¾	11+9	Sir Victor Brooke's Collection.
-28.5	5.25	9.5	28.5	10+9	Indian Museum.
20½	4	17½	20	6+6	Hon. Walter Rothschild.



Skull and Horns of Thamin. From a Burmese specimen.

THAMIN or ELD'S DEER (*Cervus eldi*).

Although belonging to the same group as the two preceding species, this deer is readily distinguished by the peculiar form of the antlers. These are rounded and rough, with a long curved brow-tine, forming a continuation of the curve of the beam, which is set at right angles to the pedicle; the beam unbranched for some distance, much curved, and finally forked, with the outer prong more subdivided than the inner. Height at shoulder about 4 feet 3 inches; weight from 210 lbs. to 245 lbs. There are three races of this species. First, the Burmese thamin (*C. eldi typicus*), ranging from near Manipur through Burma to the Malay Peninsula, in which the antlers are rounded throughout, and the coat is uniformly umber-brown. Secondly, the Manipur thamin (*C. eldi cornipes*), in which the under-surface of the fetlock is horny instead of hairy. Thirdly, the Siamese thamin (*C. eldi platyceros*), from Siam and Hainan, in which the tips of the antlers are flattened with a number of small snags, and the coat is redder, with yellowish spots. Swamp-deer from the Central Provinces show a remarkable approximation in the form of their antlers to the present species.

Length on outside curve, not including brow-tine.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Length of brow- tine.	Locality.	Owner.
42	5	29	24	3 + 2	...	Burma . .	A. H. Collins.
-41	5 $\frac{1}{4}$	30	36	5 + 7	...	Do. . .	Capt. G. H. Evans.
41	5 $\frac{1}{2}$	27 $\frac{5}{8}$	36	5 + 5	...	Upper Burma .	Lieut.-Col. O. E. P. Lloyd.
40 $\frac{1}{4}$	5	30 $\frac{1}{4}$	36 $\frac{3}{4}$	6 + 5	...	?	C. B. Smales.
¹ 39 $\frac{5}{8}$	5	31 $\frac{3}{8}$	36 $\frac{5}{8}$	20 (small points)	15 $\frac{3}{4}$	Siam . .	Sir Edmund G. Loder, Bart.
-39 $\frac{1}{2}$	...	21 $\frac{1}{2}$	33	...	...	Burma . .	Lieut.-Col. H. de H. Haig.
-39	7 $\frac{1}{2}$	22 $\frac{1}{2}$	29	10 + 10	...	Manipur . .	Capt. H. S. Wood.
-39	5	41	...	5 + 5	...	Lower Burma .	W. O. Hannington.
38 $\frac{7}{8}$	6 $\frac{1}{4}$	25 $\frac{1}{2}$	30 $\frac{3}{8}$	16 + 19	...	?	British Museum.
-38 $\frac{1}{2}$	...	...	...	...	...	Lower Burma .	R. C. E. Underwood.
38 $\frac{1}{4}$	6 $\frac{1}{4}$	24	30 $\frac{3}{4}$	6 + 5	...	Manipur . .	A. O. Hume.
38	4 $\frac{5}{8}$	29 $\frac{1}{4}$	36 $\frac{3}{4}$	5 + 5	...	Pegu . .	G. R. Radmore.
38	4 $\frac{1}{2}$	20 $\frac{1}{2}$	32	5 + 4	...	Burma . .	H. F. Hall.
-37 $\frac{3}{4}$	...	...	...	...	...	Lower Burma .	C. W. A. Bruce.
-37 $\frac{1}{2}$	5	15 $\frac{3}{4}$	26	5 + 5	...	Burma . .	H. A. Kelso.
37	5	23 $\frac{3}{4}$	31 $\frac{1}{2}$	4 + 4	...	Do. . .	Major C. S. Cumberland.
36 $\frac{3}{4}$	4 $\frac{3}{4}$	16	27	4 + 4	...	Upper Burma .	L. E. Hopkins.
-36 $\frac{1}{2}$	5 $\frac{1}{4}$	42 $\frac{1}{2}$	...	5 + 5	...	Pegu . .	B. Lentaigne.
-36 $\frac{1}{2}$	5 $\frac{1}{2}$	22 $\frac{1}{2}$	28 $\frac{1}{2}$	4 + 4	...	Sanaing . .	O. F. Wheeler-Cuffe.
36	4 $\frac{1}{2}$	23	31	10 + 9	...	Burma . .	Capt. H. W. Marsden.
36	5	...	...	4 + 4	...	?	Duke of Bedford.
36	6	18 $\frac{5}{8}$	24 $\frac{1}{2}$	8 + 8	...	Burma . .	Dr. Knocker.
35 $\frac{3}{4}$	4 $\frac{5}{8}$	19 $\frac{3}{4}$	26 $\frac{1}{4}$	4 + 3	..	Do. . .	Viscount Powerscourt.
35 $\frac{1}{2}$	4 $\frac{1}{2}$	22 $\frac{1}{4}$	31 $\frac{1}{4}$	6 + 6	...	Kyaikto, Lower Burma	J. W. Clough.
-34 $\frac{1}{2}$	5 $\frac{1}{2}$	19	25 $\frac{1}{8}$	5 + 5	...	Upper Burma .	Capt. W. K. Legge.
34 $\frac{1}{2}$	4 $\frac{1}{2}$	34	35 $\frac{1}{2}$	4 + 4	...	Do. . .	R. Gordon Smith.
34 $\frac{1}{8}$	5	24	32 $\frac{1}{4}$	6 + 6	...	Burma . .	Hon. Walter Rothschild.
34	5 $\frac{7}{8}$	23 $\frac{1}{2}$	29 $\frac{3}{4}$	10 + 10	...	Do. . .	J. Carr Saunders.
-34	5 $\frac{1}{4}$	20	...	...	...	Do. . .	Major W. Anstruther Thomson.

¹ Measured on front of antler from highest tip to tip of frontal tine 56 $\frac{1}{2}$ inches.

THAMIN or ELD'S DEER (*Cervus eldi*)—*continued*.

Extreme length of right antler round the out- side curve, high- est point, to tip of brow line.	Circum- ference.	Tip to Tip.	Widest span.	Number of points.	Locality.	Owner.
-56 $\frac{1}{4}$	5 $\frac{3}{8}$	28	37	13	Burma . .	W. F. Loftus-Tottenham.
-55 $\frac{1}{4}$	4 $\frac{1}{2}$	34 $\frac{1}{2}$	42 $\frac{1}{4}$	12	Do. . .	Do.
-55	7	28 $\frac{1}{2}$	38 $\frac{1}{2}$	12	Do. . .	Capt. G. H. Evans.
-55	5 $\frac{3}{4}$	30	37	15	Do. . .	Do.
-55	5	...	42	13	Do. . .	Do.
-53 $\frac{1}{2}$	5 $\frac{1}{2}$	...	38	16	Do. . .	W. F. Loftus-Tottenham.
-52 $\frac{3}{4}$	4 $\frac{1}{2}$	24 $\frac{5}{8}$	36 $\frac{3}{4}$	12	Do. . .	Do.
-51 $\frac{1}{8}$	5	...	33 $\frac{1}{2}$	7	Do. . .	Do.
-51	5 $\frac{1}{2}$	27	37 $\frac{1}{2}$	10	Do. . .	Capt. G. H. Evans.
-50 $\frac{1}{2}$	7 $\frac{1}{4}$	36	39 $\frac{1}{2}$	14	Do. . .	Do.



Frontlet and Antlers of Indian Muntjac.

INDIAN MUNTJAC or BARKING DEER (*Cervulus muntjac*).

This species is the typical representative of a genus of small Oriental deer differing widely from all those included in *Cervus*. The antlers, which do not usually exceed half the length of the head, have a short brow-tine and an unbranched beam, and are supported on long skin-covered pedicles, continued downwards as convergent ridges on the forehead, whence the name of rib-faced deer. Tufts of bristly hair occupy the position of the antlers in the females. The muzzle has a large naked portion, and although there is generally a pair of glands on the face, there are none either on the hock or the cannon-bone. The young are spotted, but the adults uniformly coloured. In the Indian muntjac, which is one of the reddish-coloured species, and whose range extends from Ceylon and India through Burma to China, the Malay Peninsula, Sumatra, and Java, the height at the shoulder varies from 20 to 22 inches. The Chinese muntjac (*C. reevesi*), from Southern China and Formosa, is a much smaller species, also reddish in colour; but in the rare Tenasserim muntjac (*C. feæ*), and the larger but equally scarce hairy-fronted muntjac (*C. crinifrons*) of Eastern China, the general hue of the body is dark purplish sepia-brown, with white on the buttocks and under surface of the tail. The average height of the Indian species at the shoulder is about 26 inches, and weight about 28 lbs.; a female stands about 23 inches and weighs about 32 lbs.

Length on outside curve of antler from burr to tip.	Circumference above burr.	Tip to Tip.	Locality.	Owner.
-10 $\frac{3}{8}$	...	...	Java	H. Van Son.
¹ -9 $\frac{1}{2}$	4 $\frac{1}{2}$	5	Singapore . . .	Sir Edmund G. Loder, Bart.
-8 $\frac{3}{8}$	3 $\frac{3}{8}$	6 $\frac{1}{2}$	Java	Dr. Albert von Stephani.
-8 $\frac{3}{8}$	4 $\frac{1}{2}$	4 $\frac{3}{8}$	India	W. H. Wilson.
¹ 7 $\frac{3}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Lombok	Hon. Walter Rothschild.
² -7 $\frac{1}{2}$	...	...	Near Mussuri . .	Lieut.-Col. A. E. Ward.
¹ 7 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{8}$	Lombok	Hon. Walter Rothschild.
-6 $\frac{3}{8}$	3 $\frac{3}{8}$	2 $\frac{3}{8}$	Lushhi	Capt. A. Wilson.
-6 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	Perak	Perak Museum.
6 $\frac{3}{8}$	2 $\frac{1}{2}$	3	Ranikhet	Major B. W. C. Deeble.
6 $\frac{3}{8}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$	Java	J. C. Van Son.
-6 $\frac{1}{2}$	...	...	Do.	H. Van Son.
6 $\frac{1}{2}$	2 $\frac{3}{8}$	3 $\frac{1}{2}$	Nepal	British Museum (B. H. Hodgson).
6 $\frac{1}{2}$	3	3 $\frac{3}{8}$	?	A. O. Hume.
-6 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{2}$	Namba Forest, Assam	Capt. H. S. Wood.
-6 $\frac{1}{2}$	2 $\frac{3}{8}$	...	North of Mussuri .	Capt. Harry V. Brooke.
-6	2 $\frac{3}{8}$	4 $\frac{3}{8}$	Taroy, Burma . .	Capt. G. H. Evans.
5 $\frac{3}{8}$	3	4	?	R. S. Routh.
-5 $\frac{1}{2}$	.	...	?	Indian Museum.
5 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{1}{2}$	Assam	A. H. Straker.

¹ Determination provisional.² Weight 37 lbs.**TIBETAN MUNTJAC (*Cervulus lachrymans*).**

Nearly allied to the last, but smaller.

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
2 $\frac{1}{2}$	1 $\frac{3}{8}$	3	Ningpo	British Museum (R. Swinhoe).
-2 $\frac{1}{2}$	1 $\frac{1}{2}$	3 $\frac{1}{2}$	Do.	Dublin Museum.



Head of Hairy-fronted Muntjac.

HAIRY-FRONTED MUNTJAC (*Cervulus crinifrons*).

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
11		4½	Ningpo	British Museum.

TENASSERIM MUNTJAC (*Cervulus fea*).

Antlers about two inches long.

EUROPEAN ROE (*Capreolus vulgaris*).

Roe may be recognised by the rudimentary tail, and the medium-sized antlers rising close together and almost vertically from the head, without a brow-tine, and regularly forking at a point about two-thirds the total length, with the posterior prong again subdividing, so that the number of points is usually three. There is no gland and tuft on the back, but one on the upper part of the outer side of the hind cannon-bone. In the European roe the height at the shoulder is about 26 inches. In winter the coat is dark speckly brown with a large white rump-patch, but in summer foxy red, with little or no white behind. The range embraces the greater part of Europe as far as the Caucasus, and probably Asia Minor.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
13	4	14 $\frac{1}{2}$	Germany . . .	Viscount Powerscourt.
13	4	14 $\frac{1}{2}$	Do. . . .	Do.
13	3 $\frac{1}{2}$	10 $\frac{1}{4}$	Do. . . .	Do.
-13	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do. . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-13	7	10	Do. . . .	Do.
-13	6 $\frac{1}{2}$	8	Do. . . .	Do.
12 $\frac{3}{4}$	3	8 $\frac{1}{2}$	Do. . . .	Viscount Powerscourt.
12 $\frac{1}{2}$	4	9 $\frac{1}{2}$	Do. . . .	Do.
12 $\frac{1}{4}$	4 $\frac{3}{4}$	9	Servia	Do.
-12 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Austria	Capt. John Marriott.
¹ -12 $\frac{1}{8}$	...	...	Perthshire	R. Moncrieff.
-12-11	6-12	5-4	Hungary	Count Wenkheim.
11 $\frac{5}{8}$	...	6	Monymusk, N.B. . . .	Sir Arthur Grant, Bart.
² 11 $\frac{1}{2}$	...	...	Orton, Speyside	Sir G. Macpherson Grant, Bart.
11 $\frac{1}{2}$	3	8 $\frac{3}{4}$	Germany	Viscount Powerscourt.
-11 $\frac{1}{4}$	6	6	Perth	J. G. Millais.
11 $\frac{1}{4}$	4 $\frac{1}{2}$	8 $\frac{3}{4}$	Servia	Viscount Powerscourt.
-11 $\frac{1}{8}$	4 $\frac{3}{4}$	...	Scotland	Duke of Bedford.
-11 $\frac{1}{8}$	4 $\frac{1}{2}$	...	(Single antler dug up)	J. G. Millais.
11	7 $\frac{1}{4}$	...	Ross-shire	H. M. Warrand.
-11	...	7 $\frac{1}{4}$	Aberdeenshire	Col. Gordon Cumming.
11	5 $\frac{1}{16}$	7 $\frac{1}{2}$	Ross-shire	H. M. Warrand.
11	³ 8	8 $\frac{3}{4}$	Germany	Viscount Powerscourt.
11	7 $\frac{1}{8}$	6 $\frac{7}{8}$	Sligo, Ireland	Sir Henry Gore Booth, Bart.
11	3 $\frac{1}{2}$	6 $\frac{1}{2}$	Ballindalloch	G. B. Macpherson Grant.
-10 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	Bohemia	H.S.H. Prince Alexander of Thurn and Taxis.
10 $\frac{1}{2}$	...	..	Beaufort, Ross-shire	J. G. Millais.
10 $\frac{1}{2}$	6 $\frac{1}{2}$	6	Ballindalloch	Sir G. Macpherson Grant, Bart.
10 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Inverness	C. Macpherson Grant.

¹ and ² Recorded by J. G. Millais (*British Deer and their Horns*).³ Abnormal (Peraque).

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality	Owner.
10½	4	6½	Austria	H.R.H. le Duc d'Orléans.
9½	5	5	Dorset	J. E. Harting.
9½	8½	—	Sligo, Ireland . .	Sir Henry Gore Booth.
—9½	3½	5	Spain	Abel Chapman.
—8½	3	6½	Do.	Do.
8½	3	4½	France	British Museum.



Antlers of Siberian Roe. From a photo. lent by Mr. Carl Hagenbeck.

SIBERIAN ROE (*Capreolus pygargus*).

Larger than the last, the height at the shoulder varying from 28 to 34 inches; the ears shorter and more hairy, the white rump-patch larger, and the antlers longer and more rugose with numerous nodose snags.

Mr. St. George Littledale says the specimens he observed barked like a "barking deer."

Distribution.—From the Altai and mountains of Turkestan to Eastern Siberia, and probably the Caspian provinces of Persia.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{9}{16}$	16 $\frac{1}{2}$	...	?	Carl Hagenbeck.
16	4 $\frac{1}{2}$	12	?	Viscount Powerscourt.
15 $\frac{3}{4}$	4 $\frac{1}{2}$	13 $\frac{1}{2}$	Thian Shan . . .	J. V. Phelps.

¹ Circumference of burr.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15 $\frac{1}{2}$	4 $\frac{1}{4}$	8 $\frac{1}{2}$	?	Viscount Powerscourt.
15 $\frac{1}{2}$	5	11 $\frac{3}{4}$	Thian Shan . . .	P. B. Vander-Byl.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	8	Siberia . . .	Sir Edmund G. Loder, Bart.
15 $\frac{1}{4}$	3 $\frac{1}{2}$	11	Do. . . .	Major W. Anstruther Thomson.
15	4	10 $\frac{1}{2}$	Thian Shan . . .	Prince Colloredo Mannsfeld.
15	3 $\frac{3}{8}$	15	Altai	Edinburgh Museum.
14 $\frac{1}{2}$	3 $\frac{3}{4}$	15 $\frac{1}{2}$	Do. . . .	J. Hamilton Leigh.
14 $\frac{1}{2}$	4	15	?	Duke of Bedford.
14 $\frac{1}{4}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Tekkes	R. Hayne.
14 $\frac{8}{16}$	31 $\frac{5}{16}$	...	Siberia	Paris Museum.
14	3 $\frac{7}{8}$	15 $\frac{3}{4}$	Thian Shan . . .	P. Church.
13 $\frac{7}{8}$	2 $\frac{7}{8}$	13 $\frac{5}{8}$	Semirechensk Altai .	H. J. Elwes.
13 $\frac{3}{4}$	3	6	Asia ?	British Museum.
13 $\frac{3}{4}$	3 $\frac{3}{4}$	11 $\frac{1}{2}$	?	H.R.H. le Duc d'Orléans.
13 $\frac{5}{8}$	4	9	Upper Yenisei Valley .	H. J. Elwes.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Semirechensk Altai .	Do.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	9 $\frac{5}{8}$	Upper Yenisei Valley .	Do.
13 $\frac{1}{2}$	3 $\frac{1}{2}$	11 $\frac{1}{4}$	S. Siberia	W. A. L. Fletcher.
13 $\frac{3}{8}$	31 $\frac{5}{16}$	9 $\frac{1}{2}$	Siberia	Paris Museum.



Skull and Antlers of Siberian Roe shot by Mr. St. George Littledale.



Antlers of Père David's Milou Deer. From specimens at Woburn Abbey.

PÈRE DAVID'S MILOU DEER (*Elaphurus davidianus*).

This remarkable deer differs from all the preceding, except the elk and roes, by the absence of a brow-tine to the antlers, which are large and branching, the beam forking at a comparatively short distance above the burr, and the front prong of the fork again dividing, while the hind prong is long and straight. The bushy tail is longer than in any other deer, and the neck of the male is maned. There is a gland on the outer side of the upper half of the hind cannon-bone, but none on the hock. In the adult the colour is uniformly tawny, but spotted in the young. Height at shoulder about 3 feet 9 inches. In captivity, at any rate, the antlers are shed twice a year.

Distribution.—Northern China or (?) Kashgaria; unknown in the wild state, and apparently now represented only by specimens in Europe, of which the great majority are at Woburn Abbey.

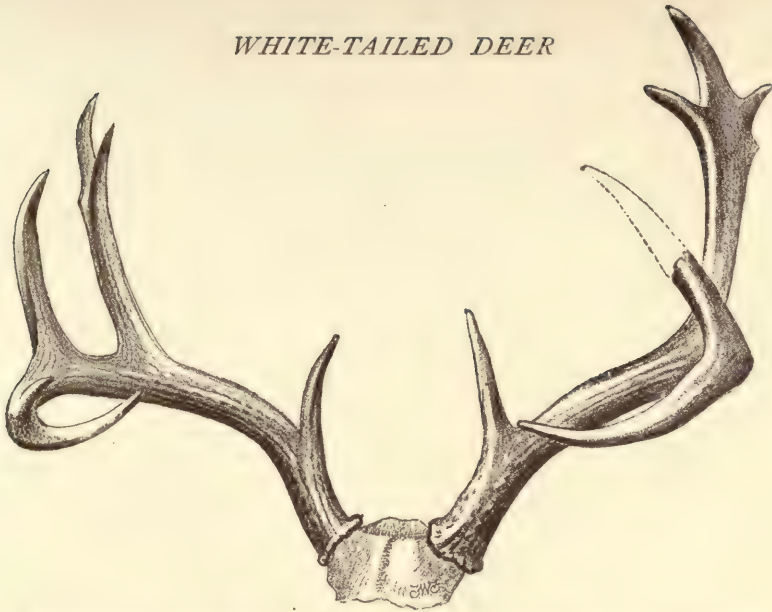
Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
32 $\frac{7}{8}$	6 $\frac{3}{8}$	13 $\frac{5}{8}$	18 $\frac{1}{2}$	8+8	Near Peking . .	Sir Edmund G. Loder, Bart.
¹ 32	7 $\frac{1}{2}$	...	...	10+8	?	Duke of Bedford.
-30 $\frac{3}{4}$	5	35 $\frac{1}{8}$	35 $\frac{1}{8}$	11+10	Imperial Park, Peking	Paris Museum (Type Specimen, Père David).
29 $\frac{1}{2}$	5 $\frac{1}{4}$	...	...	5+5	?	Duke of Bedford.
-29 $\frac{1}{4}$	6 $\frac{3}{8}$	29	...	3+2	?	Maj. W. Anstruther Thomson.
28 $\frac{1}{4}$	5 $\frac{3}{8}$	26 $\frac{1}{2}$	...	3+3	?	Hon. Walter Rothschild.
28 $\frac{1}{4}$	6 $\frac{1}{2}$	...	...	8+8	?	Duke of Bedford.
27	5 $\frac{7}{8}$	20 $\frac{1}{4}$	...	6+5	?	British Museum.
² 25	5	...	...	6+4	Bred in England .	Duke of Bedford.
22	4 $\frac{5}{8}$	...	...	4+3	Do. . .	Do.

¹ Back tine of this head-measures 32 $\frac{1}{4}$ inches.

² Back point of this head measured 28 inches from beam of antler.



Head of Mexican White-tailed Deer in the Collection of
Major W. Anstruther Thomson.



Antlers of Virginian White-tailed Deer. From a specimen in the British Museum.

WHITE-TAILED DEER (*Mazama americana*).

With the exception of the wapiti, all the deer of America are distinguished from those of the Old World, save the elk, roe, and milou deer, by the absence of a brow-tine to the antlers, which are either regularly forked or spike-like, and quite different from those of either the roe or milou deer. In the white-tailed deer they are large and complex, with a long sub-basal snag, and the front prong of the main fork developed at the expense of the hinder, and carrying a number of snags on its upper surface. Tail long. A gland-tuft on the hock, and a small cylindrical white one with a black centre near the lower end of the hind cannon-bone. Colour of upper parts chestnut in summer and bluish gray in winter, with the under surface of the tail and the buttocks pure white. Typically from Eastern North America, where the height at the shoulder reaches to 3 feet 1 inch, but represented by numerous races in other parts of the continent, which gradually decrease in size and complexity of antlers towards the south, where they extend to Peru, Bolivia, and Guiana. Weight of a specimen of the typical race shot by Mr. Selous, 12 st. 7 lbs.

Mazama, it may be observed, is the oldest name for the American deer, and must be employed if they are all included in one genus. If they are split up, *Mazama* is the title for the brockets, while the white tail and its allies should be called *Dorcelaphus*—the name *Odocoileus*, used by American writers, having several things against it.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27 $\frac{5}{8}$	5 $\frac{3}{8}$	Single antler	...	16	N. America . . .	British Museum.
27 $\frac{1}{8}$	4 $\frac{3}{8}$	14 $\frac{1}{4}$	19	6+6	Do. . . .	Do.
26 $\frac{3}{4}$	4 $\frac{1}{4}$	9 $\frac{1}{8}$	20	20	Do. . . .	Major James Grant.
26 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	17 $\frac{1}{4}$	13+13	Ontario . . .	W. S. Browne.
25 $\frac{3}{4}$	4 $\frac{1}{2}$	9	19	11	Maine . . .	H. S. Wellcome.
25 $\frac{3}{8}$	4 $\frac{5}{8}$	10 $\frac{3}{8}$	19	15+13	Texas . . .	Capt. F. Cookson.
25 $\frac{1}{4}$	4 $\frac{3}{4}$	12 $\frac{7}{8}$	17 $\frac{1}{8}$	11+9	N. America . . .	British Museum.
25	5	6 $\frac{7}{8}$	19	6+5	E. Kootenay, B.C. .	Col. A. Charlesworth.
24 $\frac{1}{2}$	4 $\frac{1}{2}$	12 $\frac{3}{8}$	18 $\frac{1}{2}$	6+6	?	J. Carr Saunders.
24 $\frac{1}{2}$	4 $\frac{1}{8}$	11 $\frac{1}{8}$	19 $\frac{1}{2}$	6+6	?	British Museum.
24	4 $\frac{5}{8}$	¹ 19 $\frac{1}{2}$	...	18	Nebraska . . .	G. B. Grinnell.
23 $\frac{3}{4}$	6	12	16 $\frac{3}{4}$	5+4	Wyoming . . .	James J. Harrison.
23 $\frac{1}{2}$	4 $\frac{5}{8}$	4 $\frac{7}{8}$	14 $\frac{1}{2}$	7+10	Nebraska . . .	Dr. Albert von Stephani.
23	5	5	16	6+6	B. Columbia . . .	J. Turner-Turner.
22 $\frac{1}{2}$	4	¹ 15 $\frac{3}{4}$	...	12	Medora, N.D. . .	President Roosevelt.
21 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{1}{4}$	13 $\frac{1}{2}$	4+4	New York State . .	Sir Edmund G. Loder, Bart.
21	4	12	17	4+4	Wyoming . . .	F. C. Selous.
19 $\frac{1}{2}$	3 $\frac{1}{2}$	12 $\frac{1}{2}$	15 $\frac{1}{2}$	5+5	B. Columbia . . .	T. P. Kempson.
17 $\frac{3}{4}$	4 $\frac{3}{4}$	...	...	27+25	Do. . . .	Moreton Frewen.
¹ ♀ 12 $\frac{1}{4}$	4	8	...	3+3	Do. . . .	J. Turner-Turner.

¹ Spread.**MEXICAN WHITE-TAIL (*Mazama americana mexicana*).**

One of the smaller races of the preceding, the height at the shoulder being about 2 feet 9 inches, and the antlers smaller and simpler.

Distribution.—South Mexico.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
14	3 $\frac{1}{2}$	9	...	...	Mexico . . .	Major W. Anstruther Thomson.
13 $\frac{3}{8}$	3 $\frac{3}{8}$	6 $\frac{7}{8}$	11 $\frac{3}{4}$	3+3	Do. . . .	British Museum.
8 $\frac{1}{4}$	3 $\frac{1}{2}$	6	6 $\frac{1}{2}$	3+3	Do. . . .	Sir Edmund G. Loder, Bart.
8 $\frac{1}{4}$	2 $\frac{1}{8}$	4 $\frac{3}{4}$	6 $\frac{5}{8}$	3+4	Do. . . .	Sir Victor Brooke's Collection.



Head of Mule-Deer. From a specimen in the possession of Mr. E. S. Cameron.

MULE-DEER (*Mazama hemionus*).

Antlers with a much shorter sub-basal snag than in the white-tailed deer, beyond which the beam is directed outwards for a short distance, and then curves upwards to form a regular fork, both prongs of which are usually equal, and generally subdivide so as to form five points on each side. Ears very large and heavy; tail short and small, with a black tip. Gland-tufts on hock and cannon-bone coloured like the leg; the latter of these elongated and situated in the upper half of the cannon-bone. General colour of upper-parts reddish tawny in summer, brownish or rufous speckled gray in winter, with a brown

horse-shoe mark on the forehead. Height at the shoulder, 3 feet 3 or 4 inches in the typical form. Weight (exceptional), 17 stone 2 lbs. (F. C. Selous).

Distribution.—The greater part of North America westward of the Missouri, extending from British Columbia to California. There are several local races, among which the South Californian (*M. hemionus peninsulæ*) is one of the smallest.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-32	6	26	...	21 + 19	Wyoming	C. R. F. Lutwidge.
30 $\frac{5}{8}$	5 $\frac{3}{4}$	18 $\frac{3}{4}$	24 $\frac{1}{2}$	5 + 5	?	W. Moat.
30	5 $\frac{3}{4}$	...	41	17	White River, Colorado	H. A. James.
-29	6 $\frac{1}{2}$	29 $\frac{1}{2}$	...	8 + 6	Montana	E. S. Cameron. (See illustra- tion.)
28 $\frac{5}{8}$	4 $\frac{1}{2}$	13 $\frac{1}{4}$	17 $\frac{3}{4}$	5 + 5	Wyoming	Ford G. Barclay.
28 $\frac{1}{2}$	5	18 $\frac{3}{4}$	21	6 + 4	British Columbia	J. McI. M'Iver Campbell.
28 $\frac{1}{2}$	...	...	24 $\frac{1}{2}$	...	White River	Major Maitland Kirwan.
28	4 $\frac{1}{4}$	22 $\frac{1}{2}$	24 $\frac{3}{4}$	6 + 6	Wyoming	H. A. C. Darley.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	21 $\frac{5}{8}$	6 + 5	North America	Sir Edmund G. Loder, Bart.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	22 $\frac{3}{4}$	5 + 5	British Columbia	D. H. Crake.
-26 $\frac{7}{8}$	5	...	...	28	North Dakota	President Roosevelt.
-26 $\frac{3}{4}$	4 $\frac{1}{4}$	...	...	5 + 5	Wyoming	Capt. M. M'Neill.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	19 $\frac{5}{8}$	20 $\frac{1}{8}$	5 + 5	Wyoming	Ernest Farquhar.
26 $\frac{1}{2}$	5	15 $\frac{1}{2}$	18 $\frac{1}{2}$	6 + 5	British Columbia	T. P. Kempson.
26 $\frac{1}{2}$	5 $\frac{3}{4}$	...	17 $\frac{1}{2}$	12	Wyoming	Hon. F. Thellusson.
26 $\frac{1}{8}$	4 $\frac{1}{8}$	15 $\frac{7}{8}$	22 $\frac{7}{8}$	6 + 6	Do.	Capt. F. Cookson.
26	4 $\frac{1}{2}$	20	21 $\frac{3}{4}$	7 + 5	Do.	The MacLaine of Lochbuie.
26	5	15 $\frac{1}{4}$	19 $\frac{1}{2}$	4 + 4	British Columbia	J. V. Colby.
25 $\frac{1}{2}$	5 $\frac{1}{2}$	...	21 $\frac{1}{2}$	8	Do.	Sir Peter Walker, Bart.
25 $\frac{1}{2}$	4 $\frac{1}{4}$	27	29	5 + 5	Wyoming	Capt. G. J. Fitzgerald.
25 $\frac{3}{8}$	4 $\frac{1}{8}$	19	20	5 + 5	Do.	A. H. Pollen.
25	5 $\frac{1}{4}$	27 $\frac{3}{8}$	27 $\frac{3}{8}$	16 + 13	Montana	Moreton Frewen.
25	5	20 $\frac{3}{4}$	24	5 + 5	Wyoming	J. L. Scarlett.
25	5	10	16 $\frac{3}{4}$	5 + 4	Do.	F. C. Selous.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-24 $\frac{7}{8}$	5	20 $\frac{1}{8}$	...	6+6	Wyoming . .	Dr. Albert von Stephani.
24 $\frac{1}{2}$	5 $\frac{1}{2}$	...	25	10	Do. . .	T. W. H. Clarke.
24 $\frac{1}{2}$	5	13 $\frac{3}{4}$	...	3+3	British Columbia .	H. S. Beall.
24	4 $\frac{1}{4}$	22 $\frac{3}{4}$	24	10	? . .	T. P. A. Holford.
24	5 $\frac{1}{2}$	24 $\frac{1}{2}$	24 $\frac{1}{2}$	5+5	British Columbia .	W. Neilson.
24	4 $\frac{1}{4}$	19 $\frac{1}{4}$	25 $\frac{1}{2}$	5+5	Wyoming . .	Capt. J. M'Call Maxwell.
-24	4 $\frac{1}{2}$	15 $\frac{3}{4}$	19 $\frac{1}{2}$	5+5	Do. . .	Count E. Hoyos.
22	4 $\frac{1}{2}$	18 $\frac{1}{4}$	24	5+4	N.-W. Nevada . .	J. Turner-Turner.



Abnormal head of Mule-Deer from British Columbia, in the possession of Mr. J. Turner-Turner.

BLACK-TAILED DEER (*Mazama columbiana*).

Nearly allied to the mule-deer, but of inferior size, with relatively smaller ears and finer hair; but specially characterised by the shorter gland and tuft on the hind cannon-bone, and the larger and longer tail, of which the upper surface is black and the lower white.

Distribution.—Western North America, from Fort George, British Columbia, to California.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27 $\frac{3}{4}$	6	15 $\frac{1}{4}$	19 $\frac{1}{4}$	9+6	British Columbia	G. Wrey.
-22	4 $\frac{1}{4}$	...	¹ 22	...	Vancouver	Clive Phillipps-Wolley.
-21	5	15 $\frac{1}{4}$	15	5+5	N.E. California	H. C. Nelson.
-20 $\frac{1}{4}$	5	17	17	5+7	Do.	A. E. Leatham.
-19 $\frac{1}{2}$	5 $\frac{3}{4}$	...	21	5+5	?	Sir W. Gordon Cumming, Bart.
19 $\frac{1}{4}$	4 $\frac{1}{4}$	14	16 $\frac{1}{2}$	3+3	S. California	Sir Victor Brooke's Collection.

¹ Outside.



Abnormal Marsh-Deer Antlers.

MARSH-DEER (*Mazama dichotoma*).

Antlers without a sub-basal snag, forking regularly, with both prongs again dividing, and the upper one usually more complex than the lower. Ears large, with white hair internally. Hair long and coarse, reversed on the withers for a short distance. General colour of upper-parts bright rufous chestnut in summer, browner in winter; legs black from the knees and hocks downward. No gland on hind cannon-bone. Size, approximately that of a red deer. Although ten is the usual number of points, sports are common.

Distribution.—From Brazil to the inner wooded districts of Argentina.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
25 $\frac{1}{8}$	5	22 $\frac{1}{4}$	...	6+7	Paraguay	Dr. Albert von Stephani.
25	5 $\frac{1}{2}$	18 $\frac{3}{4}$	21 $\frac{1}{4}$	5+4	Do.	Hon. Walter Rothschild.
24 $\frac{1}{2}$	5	16	18	5+5	Chaco of Paraguay	Admiral Sir William Kennedy.
23 $\frac{1}{2}$	6 $\frac{7}{8}$	26	25	5+5	?	Sir Edmund G. Loder, Bart.
23 $\frac{3}{8}$	5 $\frac{1}{8}$	15 $\frac{3}{4}$	16 $\frac{1}{4}$	5+4	S. America	British Museum.
23 $\frac{1}{4}$	6	...	19 $\frac{1}{2}$	12	Do.	G. R. Stuart.
22 $\frac{3}{8}$	6 $\frac{1}{4}$	20	20 $\frac{1}{2}$	5+5	Brazil	Sir Victor Brooke's Collection.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
$-22\frac{1}{2}$	$7\frac{1}{2}$	...	$15\frac{1}{4}$	6+6	Argentina	Kenyon Slaney.
$22\frac{3}{8}$	$5\frac{1}{2}$	25	...	28	Do.	A. Vans-Agnew.
$21\frac{1}{2}$	$5\frac{1}{2}$	22	$16\frac{1}{2}$	6+6	Paraguay	S. Pulley.
$21\frac{1}{2}$	5	$12\frac{3}{4}$	16	5+5	Do.	Admiral Sir William Kennedy.
$-21\frac{1}{8}$	...	$19\frac{3}{4}$	...	6+5	Entre Rios	T. Taylor.
20	$5\frac{1}{2}$	20	...	4+4	Paraguay	Count Henry Coudenhove.
-20	$6\frac{3}{8}$	$19\frac{1}{4}$	$18\frac{3}{4}$	4+4	Uruguay.	Staff-Surgeon J. Dowson, R.N.
$19\frac{3}{8}$	6	$20\frac{1}{2}$	20	3+3	Paraguay	R. A. Cooper.



Side view of Antlers of Marsh-Deer. From a specimen in the British Museum.

PAMPAS DEER (*Mazama bezoartica*).

A small deer nearly allied to the last, but with the front prong of the antlers simple, and the hinder one divided. A whorl in the hair on the middle of the back and another at the base of the neck, so that the fur of the withers is directed forwards for a considerable distance. Colour of upper-parts light reddish brown, under-parts and lower surface of tail white; upper surface of latter black. Height at shoulder, 2 ft. 6 in.

Distribution.—Brazil to Northern Patagonia, in open districts.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
14 $\frac{5}{8}$	2 $\frac{5}{8}$	13 $\frac{1}{4}$	3+3	Argentina	British Museum.
14 $\frac{1}{2}$	3	10 $\frac{3}{4}$	3+3	Do.	E. M. Crosfield.
14 $\frac{1}{4}$	3	11	3+3	?	Sir Edmund G. Loder, Bart.
14	4 $\frac{1}{4}$	11 $\frac{1}{4}$	3+3	Paraguay	Admiral Sir William Kennedy.
13 $\frac{1}{2}$	4 $\frac{3}{4}$	8	3+3	Do.	R. A. Cooper.
13	2 $\frac{1}{2}$	12 $\frac{3}{8}$	3+3	?	W. Livingstone Learmonth.
-13	2 $\frac{3}{4}$	11	3+3	?	J. Whitaker.
-12 $\frac{1}{2}$	3 $\frac{1}{2}$	7	12+11	Uruguay	J. Burnett.
12 $\frac{1}{2}$	2 $\frac{1}{8}$	8 $\frac{1}{2}$	3+3	?	Sir Victor Brooke's Collection.
11 $\frac{1}{8}$	3 $\frac{7}{8}$	13 $\frac{1}{4}$	3+3	?	British Museum (Charles Darwin).
10 $\frac{7}{8}$	3	8 $\frac{1}{8}$	3+3	Patagonia	Dr. Albert von Stephani.
10	2 $\frac{1}{4}$	12 $\frac{1}{8}$	3+3	Argentina	Count Henry Coudenhove.
7 $\frac{1}{2}$	2 $\frac{1}{4}$	5 $\frac{1}{2}$	3+3	?	Duke of Bedford.

PERUVIAN GUEMAL (*Mazama antisiensis*).

Together with the closely allied Chilean guemal (*M. bisulca*), this species constitutes a group characterised by the antlers forming a single fork. There is no gland-tuft on the hind cannon-bone, the short tail is rather bushy, and the hair coarse and brittle.

Distribution.—The high Andes, from Peru to Northern Chili.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10	3 $\frac{5}{8}$	8	Ecuador	Hon. Walter Rothschild.
9 $\frac{1}{2}$	7 $\frac{5}{8}$	4 $\frac{5}{8}$	Tinta, South Peru	British Museum (H. Whitely).
9 $\frac{3}{8}$	2 $\frac{1}{2}$	8 $\frac{1}{8}$	Ceuchepate, Peru (11,000 ft.)	Do.

WOOD-BROCKET (*Mazama nemorivaga*).

The brockets are some of the smallest deer included in the genus *Mazama*, of which they are the typical representatives.¹ They are recognisable by their simple spike-like antlers, the tufted crown of the head, and the radiation of the hair of the face from two whorls, which causes that on the nose to be directed downwards. The present species is distinguished by its small size (height at shoulder about 19 inches), its pale pepper-and-salt brownish or gray colour, the streak on the forehead, and the absence of a gland and tuft on the hock.

Distribution.—Guiana, Colombia, Bolivia, Brazil, and Trinidad.

Length on front of horn.	Girth.	Tip to Tip.	Locality.	Owner.
-4 $\frac{5}{8}$	3 $\frac{3}{4}$	4	Trinidad	Dr. Percy Rendall.
-3	2 $\frac{1}{4}$	2	Do.	Dr. Albert von Stephani.

MUSK-DEER (*Moschus moschiferus*).

From all living deer except the Chinese water-deer this species is distinguished by the absence of antlers, whose function as weapons is discharged in the male by long upper tusks. The tail is rudimentary, the fur coarse and brittle, and the lateral hoofs are very large. The males have a glandular pouch which secretes the musk from which the species takes its name. Height at shoulder about 20 inches, at rump 22 inches.

Distribution.—The forest districts of the Himalaya as far west as Gilgit, at elevations of 8000 feet or more in summer, to Tibet, Siberia, Western China, and Amurland.

Length of Tusk on outside curve.	Locality.	Owner.
-3 $\frac{1}{2}$	Himalaya	Major W. Anstruther Thomson.
3	Gurhwal	A. O. Hume.
3	Amurland	British Museum.
2 $\frac{3}{4}$	Himalaya	Rowland Ward.
2 $\frac{1}{8}$	Do.	Dr. Percy Rendall.
2 $\frac{1}{4}$	Kashmir	Sir Edmund G. Loder, Bart.
2 $\frac{5}{8}$	Do.	Major A. Nugent.

¹ Many naturalists include only the brockets in this genus; taking the name *Odocoileus*, or *Dorcylaphus* for the white-tail and its allies (see p. 99).



Skull of Northern Blotched Giraffe. From De Winton, *Proc. Zool. Soc.* 1897.

BLOTCHED GIRAFFE (*Giraffa camelopardalis*).

Ihuhla of the Swazis.

Indhlulamiti of the Zulus.

Tuthla of the Basutos.

Luomba ningo of the Chilala.

Ngabe of the Masawaras.

Giri or *Halgiri* of the Somalis.

Kameel of the Boers.

Nyama marakiti of the Asenga.

The long limbs and neck, the peculiarly-formed head, and the dappled or netted hide, render giraffes distinguishable at a glance from all other living ruminants; with none of which, except the okapi, they have any very close affinity, although their nearest relatives are the deer. So great is their distinctness that, with the okapi, they constitute a family by themselves—the *Giraffidæ*. One of the most marked peculiarities of the giraffes is to be found in the horns. The largest pair arise from the head between the ears, and are covered during life with skin. They are never shed; and in the adult are immovably united to the bones of the skull, although separate in young animals. In addition to these, there is a more or less distinct third horn, or boss, situated on the forehead between the eyes, as well as a rudimentary pair at the back of the head, or occiput. Giraffes have a long, extensile tongue, hairy lips, and broad, low-crowned cheek teeth. There are no tusks in the upper jaw; and the lateral hoofs are wanting.

There are at least two races of the species. In the northern race (*G. camelopardalis typica*) the front horn is well developed, measuring from three to five inches in height in old bulls.

In the southern giraffe (*G. camelopardalis capensis*) the front horn, even in old bulls, is so reduced in size as scarcely to merit that name at all. Within the last half century this race ranged from the Orange to the Zambesi rivers. Northward of this latter river on the eastern half of the continent, at least, no giraffe is found for about 12 degrees; but north of the Rufizi river they again appear and continue through German East Africa, reaching westward to Lake Tanganyika, and occurring east of the Mau escarpment and south of the Tana river in British East Africa. The giraffes of Nyasaland and Kilimanjaro have received separate names and may indicate distinct races.



Head of Northern Blotched Giraffe obtained in the Uganda Protectorate by Sir H. Johnston, and now in the British Museum. The development of the hindmost horns is very marked.

Northern Race.

Total height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
-17 3	10 11	British East Africa . . .	P. H. G. Powell-Cotton.
-16 0	...	Central East Africa . . .	A. H. Neumann.
♀ -13 10	8 9½	British East Africa . . .	British Museum (P. H. G. Powell-Cotton).

Southern Race.

Total height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
-18 7	...	South-East Africa . . .	F. Vaughan Kirby.
18 4	...	Angola . . .	Hon. Walter Rothschild.
-18 0	12 0	South Africa . . .	The late Sir W. Cornwallis Harris.
-17 6	Average height	South-East Africa . . .	F. Vaughan Kirby.
♂ 17 0	...	W. Matabililand . . .	F. C. Selous.
♂ 16 6	...	N. Kalahari . . .	Do.
-♀ 15 6 to 16 0	Average height	South-East Africa . . .	F. Vaughan Kirby.

THE SOMALI GIRAFFE (*Giraffa reticulata*).

The Somali giraffe (for which the name netted giraffe would be appropriate, were it not that it has a double signification) may be described as a dull, red-coloured animal with a coarse network of narrow white lines dividing the ground-colour into a number of large, irregularly quadrangular and sharply defined patches. The head and upper part of the neck are, however, spotted, while the ears and the legs from the knees and hocks downwards are white. In old bulls the five horns are well developed, although the hinder pair are somewhat less conspicuous than in the northern race of the blotched species.

Apparently this type of coloration is specially adapted for rendering the animal inconspicuous when in covert.



Head of Male Prong-horn.

PRONG-HORN (*Antilocapra americana*).

Although commonly termed an antelope, this animal differs from all the members of the *Bovidae* by the forking of the horns. These are annually shed from their bony sheaths and replaced by a new pair, which commence to grow up beneath the old ones before they are cast off. In consequence of this difference the species represents a family (*Antilocapridæ*) by itself. Horns generally absent in the female. Ears long and pointed, tail short, and neck maned. General colour chestnut, with a white rump-patch, and white bars on the throat. Height at shoulder, 36 inches; weight, 70 to 80 lbs. clean.

Distribution.—Western United States, from British Columbia to Mexico.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-17½	6½	...	9	N.W. Canada	J. Whitaker.
-17	...	...	20 outside	?	Otho Shaw.
-16	6½	...	...	N. Dakota	President Roosevelt.
15½	6½	5½	...	Wyoming	St. George Littledale.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
15 $\frac{3}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	...	Wyoming	P. B. Vander-Byl.
-15 $\frac{3}{4}$	5 $\frac{1}{8}$	...	20 outside	?	Otho Shaw.
-15 $\frac{5}{8}$	6	2 $\frac{7}{8}$	...	Teton Mountains . . .	H. Lennard.
15 $\frac{1}{2}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Wyoming	W. R. Cookson.
-15 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	...	Do.	Count E. Hoyos.
15 $\frac{1}{8}$	6 $\frac{1}{4}$	7 $\frac{5}{8}$	...	? . . . .	Col. Ralph Vivian.
15	6	...	...	Wyoming	H.R.H. le Duc D'Orléans.
15	5 $\frac{5}{8}$	5 $\frac{3}{4}$	10 $\frac{1}{4}$	Do.	St. George Littledale.
15	5 $\frac{3}{4}$	7 $\frac{3}{4}$	...	Do.	Isaac Bell.
14 $\frac{7}{8}$	5	5 $\frac{1}{4}$	...	New Mexico	Capt. F. Cookson.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	12	...	?	C. F. Bengough.
14 $\frac{1}{2}$	...	...	12 $\frac{1}{2}$	Wyoming	T. W. H. Clarke.
14 $\frac{1}{2}$	6	...	9 $\frac{1}{2}$	Laramie Plains, Wyoming.	F. G. Barclay.
14 $\frac{1}{2}$	6 $\frac{5}{8}$	5 $\frac{1}{4}$	...	Wyoming	Lieut.-Col. Hon. W. Coke.
14 $\frac{1}{2}$	6	6	...	Alberta	F. I. Mitchell.
-14 $\frac{1}{2}$	5 $\frac{3}{4}$	15 $\frac{5}{8}$	...	Colorado	Rev. Dr. R. J. Nevin.
14 $\frac{1}{4}$	5 $\frac{3}{8}$	6 $\frac{1}{4}$	10	Wyoming	Count Scheibler.
14 $\frac{1}{4}$	6	2 $\frac{5}{8}$	...	? . . . .	Sir Victor Brooke's Collection.
14 $\frac{1}{4}$	7	4 $\frac{1}{4}$	...	? . . . .	J. McL. M'Iver Campbell.
14 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	...	Wyoming	Capt. A. J. Carstairs.



Horns of Bubal Hartebeest. From Mr. Julius Jeppe's specimen.

BUBAL HARTEBEEST (*Bubalis boselaphus*).

This species brings us to the great family of hollow-horned ruminants, or *Bovidae*, in which the horns are in the form of unbranched hollow sheaths, which are not shed in the adult, and are supported on bony cores. The hartebeests are large antelopes with naked muzzles, abnormally long faces, doubly curved horns, small face-glands, large valvular nostrils (of which the lower lids are covered with short hairs), long, tufted tails, and large lateral hoofs. Both sexes are horned. The present species is the smallest of the group, standing only 43 inches at the shoulder. It has a short pedicle supporting the horns, which are in the form of the letter U, and the colour is uniform tawny, with the tail-tuft black.

Distribution.—Northern Africa (interior of Morocco, Algeria, and Tunisia) and Arabia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	8 $\frac{5}{8}$	9 $\frac{3}{4}$	North Africa	British Museum.
14 $\frac{1}{8}$	6 $\frac{3}{4}$	9 $\frac{3}{4}$	?	Col. Ralph Vivian.
13 $\frac{3}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$	Tunisia	Julius Jeppe.
13 $\frac{1}{8}$	7	5 $\frac{1}{4}$	North Africa	British Museum.



Horns of West African Hartbeest. Shot by Major J. W. Carroll.

WEST AFRICAN HARTEBEEST (*Bubalis major*).*Kanki* of the Hausas.

Apparently related to the preceding species, but larger, with more massive horns, which are more bent near the middle, and have long, smooth tips. Body said to be of a uniform grayish brown, face deep brown, the fore-legs streaked with dark brown or blackish from the knees downwards, and the tail-tuft black.

Distribution.—Gambia, Lower Nigeria, and the interior of the Cameroons.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25½	11¾	12½	Nigeria . . .	Capt. P. A. Clive.
25¾	12¼	11½	Yauri, Hausa States	Major J. W. Carroll. (See illustration.)
25¼	12¾	13¾	Near Borgu . . .	Capt. N. C. Welch.
25	11¾	10½	Benue River . . .	Julius Jeppe.
24¼	11¾	16	Nigeria . . .	Do.
24	11½	13½	Do. . . .	S. B. B. Dyer.
24	12½	8½	Do. . . .	G. F. Lobb.
24	11	10¾	Do. . . .	Capt. W. D. Wright.
23½	12	9	Do. . . .	Lieut.-Col. P. S. Wilkinson.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
23 $\frac{1}{2}$	12	4 $\frac{1}{4}$	Ashanti . . .	C. Beddington.
23 $\frac{1}{2}$	12	13 $\frac{1}{2}$	N. of Benue River .	W. H. Broun.
23 $\frac{1}{4}$	12 $\frac{1}{4}$	14	N. Nigeria . . .	Capt. D. F. MacCarthy Morrogh.
-23.5	12.5	6	Togoland . . .	Berlin Museum.
23	12 $\frac{1}{4}$	9 $\frac{1}{4}$	Niger Sudan . . .	Hon. Walter Rothschild.
23	11 $\frac{1}{2}$	9 $\frac{1}{4}$	Nigeria . . .	A. A. Smith.
23	12	9 $\frac{1}{2}$	Do.	Capt. H. A. Porter.
23	12	7	Do.	N. F. Bayne.
22 $\frac{3}{4}$	13	7	Do.	Major R. H. Beddoes.
22 $\frac{1}{2}$	12 $\frac{1}{2}$	6	Jebba, Nigeria .	Capt. G. H. F. Abadie.
22 $\frac{1}{4}$	13	14 $\frac{3}{4}$	Nigeria	Capt. J. F. Loder-Symonds.
-22	12	9 $\frac{1}{8}$	Do.	P. C. Keytel.
22	11	19 $\frac{3}{4}$	Ibi, Nigeria . . .	Major A. H. Festing.
21 $\frac{7}{8}$	12	malformed 12 $\frac{1}{2}$	Jebba, Nigeria .	Major H. M. Cowper.
¹ 21 $\frac{1}{2}$	12 $\frac{1}{4}$	...	Lokoja	Capt. C. A. Wilding.
21 $\frac{1}{2}$	9 $\frac{1}{2}$	8 $\frac{1}{4}$	Nigeria	Capt. Hon. C. J. Coventry.
21 $\frac{1}{4}$	12	12 $\frac{1}{4}$	Gambia	H. L. Stephen.
-21 $\frac{1}{4}$	11	9 $\frac{1}{8}$	Do.	Paris Museum.
♀ 20	9 $\frac{5}{8}$	6	Lokoja	The late Capt. A. W. M. Brodie.
♀ 19 $\frac{3}{4}$	9	6 $\frac{1}{2}$	Do.	F. H. Barber.
19 $\frac{3}{4}$	11 $\frac{3}{4}$	6 $\frac{3}{4}$	Gambia	H. C. Goddard.
♀ 19 $\frac{3}{4}$	8 $\frac{1}{2}$	4	Jebba, Nigeria .	Capt. G. H. F. Abadie.
♀ 19 $\frac{1}{2}$	9	4 $\frac{1}{2}$	Lokoja	Lieut.-Col. P. S. Wilkinson.
♀ 19 $\frac{1}{2}$	8 $\frac{1}{2}$	11 $\frac{1}{4}$	Nigeria	A. G. Williams.

¹ Height at shoulder, 54 inches.



Frontlet and Horns of Tora Hartebeest. Shot by Lieut.-Col. Hon. W. Coke.

TORA HARTEBEEST (*Bubalis tora*).

Native name, *Worobo*.

Horn-pedicle of medium length, the horns themselves in the form of an inverted bracket (—). Height at shoulder about 48 inches. Colour uniformly pale tawny fulvous, with the exception of the tail-tuft and chin, which are black. Although of the same uniform colour, this species is easily distinguished from *B. boselaphus* by its superior size, higher gait, and differently shaped horns. Weight about 400 lbs.

Distribution.—Abyssinia and south portion of Blue Nile.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22½	9	22½	Sudan	Carl Hagenbeck.
21	9	19½	Do.	Lieut.-Col. Hon. W. Coke. (See illustration.)
20½	9½	14½	Do.	Hon. Walter Rothschild.
20½	9½	13½	Do.	Sir Edmund G. Loder, Bart.
20½	10½	17	Do.	Julius Jeppe.
20	10½	16½	Do.	Capt. H. H. S. Morant.
20	9½	15½	Do.	British Museum.
20	9½	14½	Lake Zuay, Abyssinia .	Prince de Lucinge.
19½	9	16½	Dombelas, Abyssinia .	British Museum.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
19 $\frac{5}{8}$	10 $\frac{1}{8}$	12 $\frac{5}{8}$	Abyssinia . . .	P. H. G. Powell Cotton.
19 $\frac{1}{2}$	9 $\frac{3}{8}$	11 $\frac{5}{8}$	Do. . . .	Do.
19 $\frac{1}{4}$	9	13 $\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
19	9 $\frac{1}{4}$	11 $\frac{3}{4}$	Abyssinian Sudan . .	Prince Colloredo Mannsfeld.
-18 $\frac{3}{4}$	10	17 $\frac{1}{2}$	Sudan	Sir W. Gordon Cumming, Bart
18 $\frac{1}{2}$	8 $\frac{3}{4}$	15 $\frac{1}{4}$	Do. . . .	Col. Ralph Vivian.
18 $\frac{1}{2}$	...	16 $\frac{3}{8}$	Upper Basalam River, Abyssinia	J. Menges.
17	9 $\frac{1}{2}$	13 $\frac{1}{2}$	Settite River . . .	W. D. James.
♀ 15 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{4}$	Abyssinia	P. H. G. Powell Cotton.
♀ 14 $\frac{1}{2}$	6 $\frac{7}{8}$	5 $\frac{5}{8}$	Sudan	Hon. Walter Rothschild.
-♀ 14 $\frac{1}{4}$	6 $\frac{1}{4}$	18	Nubia	Julius Jeppe.



Head of Swayne's Hartbeest. Shot by Major H. G. C. Swayne.

SIG or SWAYNE'S HARTEBEEST (*Bubalis swaynei*).

Sig of the Somalis.

Korkei of the Gallas.

Horn-pedicle and horns of the same general type as in the *tora*. Height at shoulder about 47 inches; weight about 300 lbs. General colour pale chocolate-brown, with white tips to the hairs; face black, except the muzzle and a line between the eyes; shoulders and upper part of fore-legs, as well as a patch on upper part of hind-legs, also black.

Distribution.—Interior of Northern Somaliland and Shoa; in Somaliland it is found on the dry plateau known as the *haud*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	8¾	26¾	Somaliland	Major H. G. C. Swayne.
19½	9½	22½	Do.	G. H. Cheetham.
19½	...	24½	N. Somaliland	J. Menges.
19	9¼	18¾	Do.	Capt. M. M'Neill.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{3}{4}$	9	21 $\frac{1}{4}$	N. Somaliland .	Major R. P. Cobbold.
18 $\frac{3}{4}$	9 $\frac{1}{4}$	16	Do. .	F. G. Barclay.
18 $\frac{1}{2}$	9 $\frac{1}{4}$	19 $\frac{1}{4}$	Do. .	Capt. T. W. Greenfield.
18 $\frac{3}{8}$	8 $\frac{3}{4}$	18	Do. .	Major H. G. C. Swayne.
18 $\frac{1}{8}$	9	17 $\frac{1}{4}$	Do. .	Norman B. Smith.
-18	8 $\frac{3}{4}$	10 $\frac{3}{4}$	Do. .	Count J. Potocki.
18	9 $\frac{1}{2}$	20	Do. .	W. F. Whitehouse.
18	9	22	Do. .	Capt. B. R. M. Glossop.
17 $\frac{3}{4}$	11	17	Galla Country .	Viscount Edmond de Poncins.
17 $\frac{3}{4}$	8 $\frac{3}{4}$	21	Somaliland .	Count J. de Bylands.
17 $\frac{3}{4}$	10	21 $\frac{1}{2}$	Do. .	E. Lee Townshend.
17 $\frac{3}{4}$	10	20	Do. .	Digby Davies.
17 $\frac{1}{2}$	8 $\frac{1}{8}$	19 $\frac{1}{2}$	Do. .	T. W. H. Clarke.
17 $\frac{1}{2}$	9 $\frac{1}{4}$	19	Do. .	Sir Edmund G. Loder, Bart.
17 $\frac{1}{2}$	9	21 $\frac{3}{4}$	Do. .	J. J. Richardson.
17 $\frac{1}{2}$	10	21 $\frac{3}{4}$	Do. .	Major J. M'Call Maxwell.
17 $\frac{1}{2}$	10	23 $\frac{3}{4}$	Do. .	A. E. Butter.
17 $\frac{1}{2}$	10	18	Galla Country .	Lord Hindlip.
♀ 15 $\frac{1}{2}$	6 $\frac{3}{4}$	19	Somaliland .	Count J. de Bylands.
♀ 15 $\frac{1}{2}$	7	11 $\frac{1}{8}$	Galla Country .	Viscount Edmond de Poncins.
-♀ 15 $\frac{3}{8}$	...	...	N. Somaliland .	J. Menges.



KONGONI or COKE'S HARTEBEEST (*Bubalis cokei*).

Horn-pedicle moderate, horns bracket-shaped, very short and thick. Height at shoulder about 45 inches. Weight about 250 lbs. General colour uniform bright fawn, with the lower lip somewhat browner, and the lower part of the rump paler; tail long, with the black tuft ascending some way up the hinder surface.

Distribution.—Eastern Africa, from Usagara northwards to Kilimanjaro and Masailand.

Mr. F. J. Jackson says: "This hartebeest ranges as far north as L. Naivasha, south into German territory and east to within a few miles of the coast at the back of the Shimba hills." A bull shot by Capt. R. A. J. Montgomerie, C.B., R.N., in Masailand weighed 312 lbs.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
~20 $\frac{3}{4}$	...	...	East Africa	Julius Jeppe.
19 $\frac{3}{4}$	10 $\frac{1}{2}$	13	Do.	R. Meinertzhagen.
19 $\frac{1}{4}$	10	18 $\frac{3}{4}$	Do.	J. Gardiner Muir.
19 $\frac{1}{4}$	10	16	Do.	R. Wahrmann.
~19 $\frac{1}{4}$	9 $\frac{3}{4}$	13	Do.	P. C. Keytel.
19 $\frac{1}{4}$	9 $\frac{3}{8}$	16	Do.	Major E. G. Harrison.
19	9 $\frac{1}{4}$	16	Do.	Sir Robert Harvey, Bart.
~19	10 $\frac{1}{4}$	14	Lake Manjara	O. Neumann.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-19	10 $\frac{3}{4}$	14	East Africa . . .	Berlin Museum.
19	9	15 $\frac{3}{4}$	Do. . . .	F. W. Belt.
18 $\frac{5}{8}$	8 $\frac{7}{8}$	16 $\frac{1}{4}$	Do. . . .	F. J. Jackson.
-18 $\frac{1}{2}$	10 $\frac{1}{2}$	18	West of Mombasa . .	C. W. Hobley.
18 $\frac{1}{2}$	10	12 $\frac{5}{8}$	East Africa . . .	T. P. A. Holford.
18 $\frac{1}{2}$	10	16 $\frac{1}{4}$	Makindo, East Africa .	Rhys Williams.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	18 $\frac{3}{4}$	East Africa . . .	E. N. Buxton.
18 $\frac{1}{4}$	9 $\frac{1}{2}$	13 $\frac{1}{8}$	Do. . . .	H. C. V. Hunter.
18 $\frac{1}{4}$	9 $\frac{1}{4}$	14 $\frac{1}{4}$	Do. . . .	Douglas M'Douall.
18 $\frac{1}{2}$	10 $\frac{1}{2}$	18 $\frac{3}{4}$	Do. . . .	Norman B. Smith.
18	10 $\frac{5}{8}$	14 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
18	10	11 $\frac{3}{4}$	Do. . . .	Lieut.-Col. W. A. W. Lawson.
-18	7 $\frac{1}{2}$	12 $\frac{1}{2}$	Masailand . . .	Count Scheibler.
18	10	13 $\frac{3}{4}$	East Africa . . .	Major C. P. Foley.
-17 $\frac{3}{4}$	10	14	Do. . . .	Capt. W. Jardine.
17 $\frac{3}{4}$	10	18 $\frac{3}{4}$	Do. . . .	R. H. Fawkes.
17 $\frac{1}{2}$	8 $\frac{3}{4}$	11	Do. . . .	Lieut. F. C. Grover, R.N.
17 $\frac{1}{2}$	9 $\frac{3}{8}$	17	Do. . . .	Lord Basil Blackwood.
17 $\frac{1}{2}$	10	14	Do. . . .	F. C. Cobb.
17 $\frac{3}{8}$	9 $\frac{1}{2}$	11	Do. . . .	J. Carr Saunders.
-17 $\frac{3}{8}$	10	14 $\frac{1}{8}$	Rift Valley, East Africa.	C. Steuart Betton.
17 $\frac{1}{4}$	9 $\frac{1}{4}$	13	East Africa . . .	C. C. Bowring.
17 $\frac{1}{4}$	9 $\frac{1}{4}$	12 $\frac{3}{4}$	Do. . . .	Lieut. G. P. Leith, R.N.
-17 $\frac{1}{4}$	9 $\frac{3}{4}$	16 $\frac{3}{4}$	Do. . . .	Lieut. A. A. Ellison, R.N.
-17 $\frac{1}{4}$	...	...	Do. . . .	Sir Edmund G. Loder, Bart.
17	9 $\frac{1}{2}$	12	Do. . . .	Lord Delamere.
17	9 $\frac{3}{8}$	13 $\frac{1}{4}$	Machakos . . .	Brig.-Gen. Sir F. J. D. Lugard.
17	8 $\frac{3}{4}$	14 $\frac{1}{4}$	East Africa . . .	S. L. Hinde.
17	9	12 $\frac{1}{4}$	Do. . . .	A. Bayley Worthington.
17	10	10 $\frac{3}{4}$	Do. . . .	Count Geza Széchenyi.
17	10	1 $\frac{3}{4}$	Do. . . .	Major E. J. Tickell.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
17	9 $\frac{1}{4}$	15	East Africa . . .	P. Niedieck.
- ♀ 15 $\frac{1}{2}$	7 $\frac{1}{2}$	17 $\frac{3}{4}$	Do.	P. C. Keytel.
♀ 15 $\frac{1}{4}$	7 $\frac{1}{4}$	12 $\frac{1}{2}$	East Africa . . .	S. L. Hinde.
♀ 14 $\frac{7}{8}$	7 $\frac{3}{8}$	11	Do.	O. Neumann.
- ♀ 14	7 $\frac{1}{2}$	15 $\frac{1}{4}$	Do.	Julius Jeppe.
- ♀ 14	7	13 $\frac{1}{2}$	Do.	J. B. Wheelwright.
- ♀ 13 $\frac{3}{4}$	7 $\frac{9}{4}$	14 $\frac{1}{2}$	Ndara Teita, East Africa	C. Steuart Betton.
♀ 13 $\frac{1}{2}$	7 $\frac{1}{2}$	11 $\frac{3}{4}$	?	T. P. A. Holford.
♀ 13	6 $\frac{3}{4}$	13	?	Lord Delamere.



Head of Hunter's Hartbeest. From a specimen shot by Mr. H. C. V. Hunter.



Horns of Male Cape Hartbeest. Mr. F. H. Barber's specimen.

CAPE HARTEBEEST (*Bubalis cama*).

Kama of the Bechuanas.

Ingama of the Makalakas.

Horn-pedicle greatly elongated, horns very sharply bent, and forming a letter V when viewed from the front. Height at shoulder about 48 inches. General colour brownish fulvous, darker than in any of the preceding; face (except between the eyes), back of neck, chin, shoulders, thighs, and tail, black or blackish; lower portion of buttocks with a conspicuous whitish or yellowish blaze, forming a marked contrast to the other colours.

Distribution.—Africa southwards of the Limpopo, but extending farther northwards along the confines of the Kalahari desert. This fleet and handsome species (the roi hartebeest) is now nearly exterminated in the Cape, although still found in the Transvaal. A few still linger in the old Bushman country in the north-west of Cape Colony. Although practically exterminated in the Orange River Colony and in most of the Transvaal (except to the north-west), numbers of hartebeest are to be found in the plains and open forest of British Bechuanaland and the Bechuanaland Protectorate. In the North Kalahari and the desert regions about the Botletli River big troops are to be met with. This hartebeest is remarkably fleet and enduring, and by no means easy to bag. Its flesh is palatable, and its brilliant coat much sought after by the native tribes.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-25 $\frac{3}{4}$	12	4	Orange Colony	Julius Jeppe.
-25	11 $\frac{1}{4}$	10 $\frac{1}{2}$	?	Capt. W. Jardine.
-25	...	...	Orange Colony	F. H. Barber. (See illustration.)
25	11	10	?	C. Rube.
-24 $\frac{7}{8}$	11	7	Nata River	H. M. Barber.
24 $\frac{3}{4}$	10 $\frac{1}{2}$	9 $\frac{5}{8}$	?	R. T. Coryndon.
24 $\frac{1}{2}$	12	11	Near Boshof, O.R.C.	Hon. Walter Rothschild.
24 $\frac{1}{2}$	12	9 $\frac{1}{2}$	South Africa	C. D. Rudd.
-24 $\frac{3}{8}$	10 $\frac{1}{4}$	9 $1\frac{5}{16}$	Damaraland	Th. Rehbock.
-24 $\frac{3}{8}$	11	17 $\frac{3}{8}$	?	P. C. Keytel.
-24 $\frac{1}{4}$	11	7 $\frac{7}{8}$	South Africa	Julius Jeppe.
-24	...	...	Do.	W. J. Corder.
23 $\frac{3}{4}$	10	8 $\frac{3}{8}$	Do.	British Museum (Sir Andrew Smith).
23 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{1}{2}$	Kamaland	F. C. Selous.
23 $\frac{1}{2}$	12	6 $\frac{3}{4}$	?	J. S. Dawson.
-23 $\frac{1}{2}$	13	5 $\frac{7}{8}$	?	Sir Edmund G. Loder, Bart.
23	11 $\frac{1}{2}$	8 $\frac{1}{2}$	?	F. D. Pirie.
23	12	5 $\frac{1}{2}$	South Africa	G. Richards.
23	11	11	Do.	A. H. Harrison.
-22 $\frac{1}{2}$	11	8 $\frac{1}{2}$	Do.	A. Ohlsson.
-22 $\frac{1}{2}$	10 $\frac{1}{8}$	12 $\frac{1}{2}$	Do.	Abel Chapman.
-♀ 21 $\frac{3}{8}$	8 $\frac{1}{8}$	13 $\frac{1}{2}$	Do.	Julius Jeppe.
-♀ 21	7 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	P. C. Keytel.
-♀ 20	...	...	Orange Colony	South African Museum.
♀ 19 $\frac{7}{8}$	7 $1\frac{1}{16}$	11 $1\frac{1}{16}$	Damaraland	Th. Rehbock.
♀ 19 $\frac{1}{2}$	8 $\frac{3}{8}$	8 $\frac{1}{4}$	South Africa	G. Richards.
♀ 19	8 $\frac{1}{2}$	6 $\frac{1}{2}$	Kalahari.	H. A. Bryden.
-♀ 18 $\frac{1}{2}$	8 $\frac{1}{4}$	6 $\frac{1}{2}$	?	P. C. Keytel.
♀ 18	7 $\frac{3}{4}$	9	South-West Africa	A. N. Henderson.



Skull and Head of Jackson's Hartebeest.

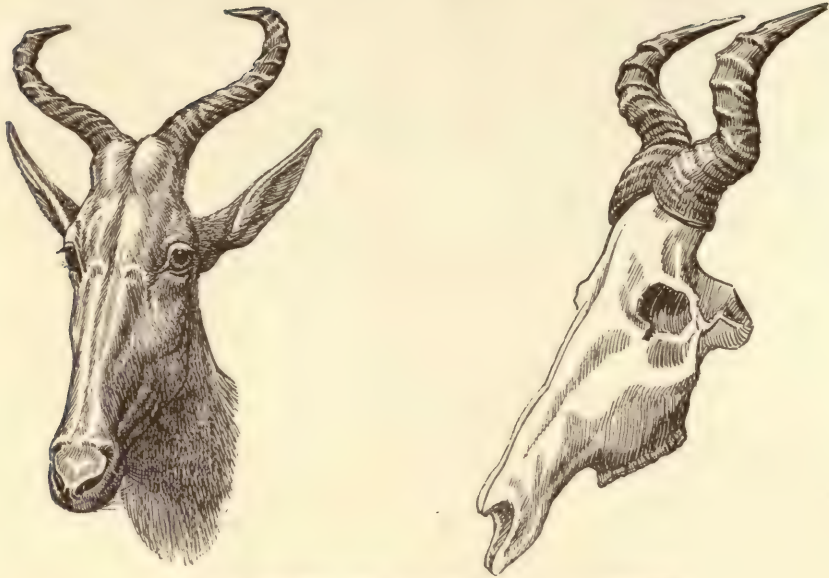
HEUGLIN'S HARTEBEEST (*Bubalis lelwel*).

Generally similar to the preceding, but with the horns less abruptly bent backwards from above. In the closely allied or identical Jackson's Hartebeest there is no black blaze on the face, and the colour is uniformly foxy red. Weight about 300 lbs.

Distribution.—Typically from the Bahr-el-Ghazal, Upper Nubia, and Kordofan; represented in the interior of British Central Africa, and north of Lake Baringo, Uganda, by the so-called *B. jacksoni*, to which the under-mentioned specimens belong.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25	12 $\frac{1}{4}$	11 $\frac{1}{2}$	Uganda	Douglas M'Douall.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	13 $\frac{3}{4}$	Do.	Dr. A. Paget.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	13 $\frac{3}{4}$	Kordofan	C. E. Lyall.
24 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$	East Central Africa	F. J. Jackson.
24 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{3}{4}$	Kordofan	C. E. Lyall.
23 $\frac{1}{2}$	12	12	?	Major A. E. Smith.
23 $\frac{1}{2}$	10 $\frac{1}{2}$	8 $\frac{1}{4}$	Sudan	Col. B. T. Mahon.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	8 $\frac{1}{2}$	Uganda	C. Craig.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner
23 $\frac{1}{2}$	12	9	E. C. Africa	E. Gedge.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	6 $\frac{1}{2}$	North end of Lake Albert	Col. Trevor Ternan.
23 $\frac{1}{4}$	12	10 $\frac{1}{2}$	East Africa	A. Bayley-Worthington.
23 $\frac{1}{4}$	11 $\frac{1}{2}$	9 $\frac{1}{2}$	Do.	Lieut.-Col. E. G. T. Bainbridge.
23	11 $\frac{3}{4}$	4 $\frac{1}{4}$	Do.	W. Cooper.
23	11 $\frac{3}{4}$	8 $\frac{1}{4}$	E. C. Africa	Sir Edmund G. Loder, Bart.
-23	...	8 $\frac{1}{4}$	? . . . .	Major W. Anstruther Thomson
23	12 $\frac{3}{4}$	8 $\frac{1}{4}$	E. C. Africa	Lieut.-Col. W. A. W. Lawson.
-22 $\frac{7}{8}$	10 $\frac{5}{8}$	11 $\frac{3}{4}$	E. of Victoria Nyanza .	Paris Museum.
-22 $\frac{3}{4}$	...	...	Uganda	Capt. C. A. Sykes.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	P. B. Vander-Byl.
22 $\frac{1}{2}$	10 $\frac{3}{4}$	10 $\frac{3}{4}$	E. C. Africa	Capt. E. J. Tickell.
22 $\frac{1}{2}$	12	6	?	Major C. N. Price.
22 $\frac{1}{2}$	11	12	Molo River	Rhys Williams.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	6 $\frac{1}{2}$	Uganda	Capt. M. F. Gage.
22 $\frac{1}{2}$	11	5 $\frac{3}{4}$	Do.	Sir Henry D. Tichborne, Bart.
22 $\frac{3}{8}$	10 $\frac{3}{4}$	11	Do.	Capt. F. D. Lugard.
22 $\frac{3}{8}$	12	8 $\frac{3}{4}$	White Nile	Capt. C. J. Hawker.
22 $\frac{1}{4}$	12	11	East Africa	F. C. Selous.
22	10 $\frac{1}{4}$	12 $\frac{1}{4}$	White Nile	P. Niedieck.
22	11	9 $\frac{1}{2}$	E. C. Africa	R. Meinertzhagen.
21	10 $\frac{1}{2}$	9 $\frac{1}{2}$	Do.	Julius Jeppe.
-21	11 $\frac{1}{2}$	6 $\frac{5}{8}$	Gelo River	O. Neumann.
♀ 21	10 $\frac{3}{4}$	11 $\frac{1}{4}$	White Nile	Dr. A. Paget.
♀ 20 $\frac{1}{4}$	9 $\frac{1}{8}$	10	Do.	P. Niedieck.
♀ 18 $\frac{1}{2}$	8	10 $\frac{3}{4}$	E. C. Africa	E. J. L. Berkeley.
♀ 18 $\frac{1}{4}$	8	5 $\frac{7}{8}$	Uganda	Col. Trevor Ternan.
♀ 18	8 $\frac{5}{8}$	4 $\frac{3}{4}$	N. Uganda	Major R. M. Sanders.
♀ 18	9	7 $\frac{3}{8}$	? . . . .	Capt. J. Ponsonby.
♀ 18	8	7 $\frac{1}{2}$	Nile Valley	Major M. L. Carleton.



Head of Female and Skull of Male Neumann's Hartebeest.

NEUMANN'S HARTEBEEST (*Bubalis neumanni*).

Nearly allied to *B. lelwel*, but distinguished by the more widely separated horns, which at first extend outwards, almost at right angles, and then curve inwards. They are also shorter and more slender, with the terminal rings nearer the tips. Mr. Walter Rothschild gives the following particulars:—

Colour of hair fulvous fawn, much richer on the back, where there are also some darker spots, which may be stains or natural; below very much paler. Chin blackish, tip of tail black. The male is brighter and darker in colour than the female. There are also on the back some patches with longer, thicker, almost whitish-buff hair, perhaps remains of the winter fur.

Description.—East Africa, in the neighbourhood of Lake Rudolf.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-21	9 $\frac{3}{8}$	11 $\frac{1}{2}$	East Africa	Lieut.-Col. W. A. W. Lawson.
-20 $\frac{3}{8}$	11 $\frac{3}{4}$	11 $\frac{1}{4}$	El donyo eb Urru, Rift Valley .	C. Steuart Betton.
20	11 $\frac{1}{2}$	11 $\frac{1}{4}$	East Africa	F. C. Selous.
19 $\frac{3}{4}$	11	9 $\frac{3}{8}$	Do.	W. Cooper.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
19 $\frac{3}{4}$	...	...	East Africa	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	10 $\frac{1}{4}$	9 $\frac{1}{4}$	Lake Nakaru	Capt. J. Ponsonby.
19 $\frac{1}{4}$	9 $\frac{3}{4}$	8 $\frac{1}{4}$	Do.	P. B. Vander-Byl.
19	11	9 $\frac{3}{4}$	? . . . .	F. J. Jackson.
19	11 $\frac{1}{4}$	9 $\frac{1}{4}$	East Africa	H. T. Barclay.
19	10 $\frac{5}{8}$	14 $\frac{1}{2}$	Lake Stefanie	O. Neumann.
18 $\frac{7}{8}$	10	9	Mau Plateau	Major C. H. Villiers.
18 $\frac{1}{2}$	11 $\frac{1}{4}$	9 $\frac{3}{4}$	? . . . .	A. Brocklehurst.
18 $\frac{1}{2}$	11 $\frac{3}{4}$	6	?	T. P. A. Holford.
18 $\frac{1}{2}$	10	9	Near Achmed Agha . . .	Capt. J. H. Rivers.
18 $\frac{1}{2}$	10 $\frac{1}{2}$	9	Mau Plateau	Hon. Walter Rothschild.
17 $\frac{3}{4}$	10	7 $\frac{1}{4}$	Lake Baringo	Do.
17 $\frac{1}{2}$	11	12 $\frac{1}{4}$	? . . . .	Douglas M'Douall.
17 $\frac{1}{2}$	10	9 $\frac{1}{2}$	? . . . .	C. Craig.
17 $\frac{1}{4}$	11 $\frac{1}{4}$	9 $\frac{3}{4}$	Kinangop Flat	Lord Delamere.
17 $\frac{1}{4}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	W. of Eldomo Ravine . .	G. E. Smith.
16 $\frac{1}{2}$	10 $\frac{3}{4}$	8 $\frac{1}{4}$	N.E. of Lake Rudolf . .	A. H. Neumann.
♀ 16 $\frac{1}{2}$	8 $\frac{1}{4}$	9 $\frac{3}{4}$	Lake Nakaru	Rhys Williams.
♀ 16	8 $\frac{1}{2}$	9 $\frac{3}{4}$	? . . . .	C. Craig.
♀ 15 $\frac{3}{4}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	E. Africa	Sir Henry D. Tichborne, Bart.
♀ 15 $\frac{1}{2}$	8	5 $\frac{3}{4}$	Do.	F. C. Selous.
♀ 15 $\frac{3}{8}$	8 $\frac{1}{4}$	8 $\frac{3}{8}$	? . . . .	F. J. Jackson.
♀ 15 $\frac{1}{4}$	7 $\frac{1}{4}$	8 $\frac{1}{2}$	Achmed Agha	Major R. M. Sanders.
♀ 15 $\frac{1}{4}$	7 $\frac{1}{2}$	7	Near Lake Elmeteita . .	T. P. A. Holford.
♀ 14 $\frac{1}{2}$	7 $\frac{3}{8}$	8 $\frac{1}{4}$	Kero, E. of Bahr-el-Jebel .	Capt. R. M. Sanders.
♀ 13 $\frac{1}{2}$	7 $\frac{1}{4}$	9 $\frac{3}{4}$	E. shore of Lake Rudolf .	A. H. Neumann.
♀ 13 $\frac{3}{8}$	7 $\frac{1}{2}$	10	?	Lord Delamere.
♀ 13	7 $\frac{1}{4}$	8 $\frac{1}{2}$	Achmed Agha	Major R. M. Sanders.



Head of Lichtenstein's Hartebeest.

LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*).

Horn-pedicle very short and broad, and the horns themselves much curved inwards towards one another below the terminal backward inclination. Height at shoulder about 50 inches, weight about 300 lbs. General colour tawny fulvous, becoming more rufous along the back, with the chin, tail-tuft, and front of cannon-bones black.

Distribution.—East Africa north of the Sabi River, throughout Nyasaland and Mozambique to Usagara.

Inkulando of the Mashonas.
Kokotombwi in Barotsiland.

Konze in the Chilala and Chibisa
countries.
Konshe in the Chinyanja.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-24 $\frac{3}{4}$	...	...	?	J. Rosen.
-22 $\frac{7}{8}$	11	7 $\frac{7}{8}$	?	Mr. Justice Hopley.
-22 $\frac{3}{4}$	...	...	Nyasaland	F. Watkinson.
21 $\frac{1}{2}$	12 $\frac{1}{4}$	9	E. of Tanganyika . . .	O. L. Berringer.
21 $\frac{1}{2}$	12 $\frac{1}{2}$	9	Batoka Plateau, Northern Rhodesia	F. Smitheman.
21 $\frac{1}{2}$	13 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	T. G. Davey.
-21 $\frac{1}{2}$	...	...	Do.	R. T. Coryndon.
21 $\frac{1}{4}$	12 $\frac{1}{2}$	5 $\frac{1}{4}$	?	L. A. Wallace.
21	12 $\frac{1}{4}$	8 $\frac{3}{4}$	Barotsiland	H. Timmins.
-21	...	...	?	O. R. Dunell.
-21	12 $\frac{1}{2}$	8	Angoniland	Capt. J. Brander Dunbar.
-20 $\frac{3}{4}$	12 $\frac{3}{8}$	7 $\frac{3}{8}$	Portuguese East Africa .	F. Vaughan Kirby.
-20 $\frac{3}{4}$	...	...	?	Julius Jeppe.
20 $\frac{5}{8}$	13	6	Fort Johnstone, B.C.A. .	C. C. Bowring.
20 $\frac{1}{2}$	12 $\frac{1}{2}$	8 $\frac{3}{4}$	?	George Grey.
-20 $\frac{1}{2}$	...	9 $\frac{1}{4}$	Batoka Plateau	E. Folley.
20 $\frac{1}{4}$	11	10 $\frac{3}{4}$	?	P. C. Keytel.
-20 $\frac{5}{16}$	11 $\frac{1}{16}$	7 $\frac{5}{16}$	British Central Africa . .	A. S. Hamilton.
20 $\frac{1}{8}$	12 $\frac{1}{4}$	10 $\frac{1}{4}$	Congo Free State . . .	Julius Jeppe.
-20 $\frac{1}{8}$	12 $\frac{3}{8}$	5 $\frac{1}{4}$	German E. Africa . . .	O. Neumann.
20	12 $\frac{1}{4}$	6 $\frac{1}{2}$	British Central Africa . .	R. Berridge.
20	13	6	N.W. Rhodesia	Col. C. Harding.
-20	12	5 $\frac{1}{4}$	Nyasaland	W. H. Wilson.
20	12 $\frac{1}{8}$	8	Wami River, East Africa	Sir J. Kirk.
20	13 $\frac{1}{4}$	8	Fort Hill, B.C.A. . . .	John Yule.
19 $\frac{3}{4}$	12 $\frac{3}{4}$	4 $\frac{1}{2}$	Tanganyika Plateau . . .	E. Wilson.
-19 $\frac{3}{4}$	12 $\frac{3}{4}$	4 $\frac{3}{4}$	S.E. Africa	H.R.H. Prince Pedro d'Orleans et de Braganza.
19 $\frac{3}{4}$	12 $\frac{1}{2}$	9 $\frac{1}{2}$	British Central Africa . .	Capt. R. S. Chichester.
19 $\frac{1}{2}$	11 $\frac{1}{2}$	12	Do. . . .	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	11 $\frac{1}{2}$	8 $\frac{1}{8}$	S.E. Africa	Hon. Walter Rothschild.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19½	12½	5½	Tanganyika	A. Mathews.
19¼	13	3¾	?	Dudley West.
19	12	8	British Central Africa	J. H. Hayes.
19	11	8¼	Do.	Capt. J. S. Brogden.
19	12	4¼	Liwondes, B.C.A.	C. C. Bowring.
19	11½	4¾	East Africa.	British Museum.
18⅞	13½	5½	B.C.A.	R. H. Storey.
- ♀ 17½	...	...	Pungwe	F. Lean.
♀ 15	8⅞	4¾	River Sabi, Mashonaland	British Museum (F. C. Selous).
- ♀ 15	7⅞	5¾	Portuguese East Africa	F. Vaughan Kirby.

HUNTER'S HARTEBEEST (*Damaliscus hunteri*).

Somali name, *Arôle*.

Gala name, *Blanketta*.

With this species we come to a group of antelopes closely allied to the true hartebeests, but in which the frontal region is not elevated into a horn-pedicle, while the horns themselves form in most cases a lyrate or simple curve, and the face is of medium length. In the present species the slender horns are indeed doubly curved, although without the sudden angulation of the true hartebeests. They slant upwards and outwards, and then bend downwards, after which the long points are directed upwards. Colour uniform rufous, with a white chevron on the face, the inner surface of the ears and the tail-tuft white. Height at shoulders about 4 feet, and the build light and graceful.

Distribution.—Southern Somaliland to north bank of Tana River.

Length.					
On front curve.	Straight.	Circumference.	Tip to Tip.	Locality.	Owner.
-26½	22½	8½	12½	Jubaland	Major E. G. Harrison.
26¼	22	8⅞	12½	Tana Valley, East Africa	Sir Robert Harvey, Bart.
24⅞	...	8⅞	15½	Do.	H. C. V. Hunter.
24⅞	21¼	8⅞	9¾	Do.	Sir Robert Harvey, Bart.
♀ -21¼	19½	5⅞	11	Jubaland	Major E. G. Harrison.
♀ 21	...	5¾	7	Tana River	F. H. Barber.
20½	...	5⅞	8⅞	Do.	Hon. Walter Rothschild.



Head of Korrigum.

KORRIGUM or SENEGAL HARTEBEEST (*Damaliscus korrigum*).

Derri of the Hausas.

Horns with a single slightly lyrate curve. Size medium. General colour reddish, with patches on the face, shoulders, upper part of fore-legs, hips, and thighs, and the tail-tuft black; no dark markings on back and feet.

Distribution.—Senegambia and the interior of West Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26 $\frac{3}{4}$	9 $\frac{1}{8}$	15 $\frac{1}{8}$	Senegambia . . .	Imperial Museum, Vienna.
23 $\frac{1}{4}$	10	8	Lake Chad . . .	S. B. B. Dyer.
23 $\frac{5}{8}$	10 $\frac{1}{2}$	10	Bornu, Lake Chad .	Capt. J. K. Cochrane.
22 $\frac{1}{2}$	8 $\frac{3}{4}$	11 $\frac{3}{8}$	Gambia . . .	Julius Jeppe.
21 $\frac{1}{2}$	9 $\frac{1}{8}$	15 $\frac{3}{8}$	Do. . .	Paris Museum.
21 $\frac{3}{8}$	9 $\frac{1}{8}$	11 $\frac{1}{2}$	Do. . .	British Museum (Dr. P. Rendall).
20 $\frac{5}{8}$	9 $\frac{1}{4}$	8 $\frac{3}{4}$	Benue River . . .	Major J. A. Burdon.
♀ 19 $\frac{5}{8}$	6 $\frac{3}{4}$	5 $\frac{3}{4}$	Lake Chad . . .	S. B. B. Dyer.
♀ 19 $\frac{1}{4}$	6 $\frac{3}{4}$	8	Between Benue and Lake Chad	Hon. Walter Rothschild.
♀ 18 $\frac{5}{8}$	7 $\frac{3}{8}$	6 $\frac{1}{2}$	Benue River . . .	Major J. A. Burdon.

TIANG (*Damaliscus korrigum tiang*).

Apparently only a local race of the korrigum, from which it is distinguished by its slightly inferior dimensions, and certain differences in the black markings on the face and limbs.

Distribution.—Sennar, Kordofan, and Bahr-el-Ghazal.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
24½	9½	9	White Nile	H. Cookson.
23	9½	8½	Do.	E. C. Crispin.
22¾	8¾	5½	Do.	Lord St. Oswald.
22¾	8¾	9	Do.	British Museum (R. M'D. Hawker).
22¾	9¾	14	Do.	Col. B. T. Mahon.
22¼	8½	6¼	Do.	Capt. H. N. Dunn.
22	8¼	7¼	Do.	J. H. Whitehouse.
21¾	9	7¼	Do.	P. Niedieck.
♀ 21¾	7	7	Do.	Col. B. T. Mahon.
21½	7¼	3¼	Do.	Capt. C. J. Hawker.
21½	8½	7½	Do.	Major Hon. W. Guinness.
21¼	9	6½	Do.	R. M'D. Hawker.
21	8¾	7½	Abyssinian Sudan	Prince Colloredo Mannsfeld.
20¾	8½	6¾	White Nile	H. F. Buxton.
-20¾	8½	5½	Akobo River	O. Neumann.
20¾	7½	7	White Nile	C. Adeane.
20½	8¾	9	Do.	Lieut.-Col. A. Colville.
20½	8¾	6	Do.	Major F. J. L. Howard.
20¼	8	6¼	Do.	C. Liddell.
♀ -20¼	6½	3	Near Fashoda	Hon. F. E. Guest.
♀ 20¼	6¾	6¾	Bahr-el-Ghazal	British Museum (Consul Petherick).
20	8¼	5¾	White Nile	Count E. Hoyos.
20	8¼	7½	Do.	E. N. Buxton.
20	8	5¾	Do.	G. H. Cheetham.
-19¾	7½	6½	Bahr-el-Ghazal	Sir W. Garstin.
19¾	7½	4½	?	Capt. J. F. Wolseley.
19½	8¼	8	White Nile	Capt. J. G. A. Massy.
-19½	8	6½	Do.	Major W. Anstruther Thomson.
19	7½	7¾	Do.	Col. St. G. C. Henry.
♀ 19	6¼	6½	Do.	P. Niedieck.
♀ 19	7	9½	Do.	E. C. Crispin.
♀ 18¾	6¾	8	Do.	W. D. James.
♀ 18¾	6½	6¾	Do.	Lieut. W. B. Drury, R.N.
♂ 18½	6¾	7½	Sudan	Prince Henry of Liechtenstein.



Head of Topi. From a specimen shot by Mr. A. H. Neumann.

TOPI (*Damaliscus corrugum jimela*).

Korké of the Gallas.

The southern representation of the last, distinguished by its still smaller size (height at shoulder, 43-44 inches), shorter and more slender horns, and the somewhat brindled appearance of the coat, due to patches of longer hairs on the otherwise short fur. General colour a peculiar purple-brown, with the dark markings less defined and less black than in *D. corrugum typicus*. Weight about 250 lbs.

Distribution.—British East Africa from the Juba to the Sabuki River, and thence to Uganda and Uniamwezi.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
21	8	6½	North end of Lake Rudolf.	The late H. Andrew.
19½	6½	3½	East Africa	H. C. V. Hunter.
19½	8½	8	S. Albert Edward Nyanza .	E. S. Grogan.
19	7½	8	Lake Rudolf	A. E. Butter.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
19	6 $\frac{3}{4}$	8 $\frac{1}{2}$	East Africa . . .	A. Louw.
18 $\frac{3}{4}$	8 $\frac{1}{4}$	6 $\frac{1}{4}$	North end of Lake Rudolf.	A. H. Neumann. ¹
-18 $\frac{1}{2}$	7 $\frac{1}{2}$	6	Jubaland . . .	Major E. G. Harrison.
18 $\frac{1}{2}$	7 $\frac{3}{4}$	5 $\frac{1}{4}$	Tana River . . .	Major H. de Preé.
18 $\frac{1}{2}$	8 $\frac{3}{4}$	8 $\frac{1}{2}$	East Africa . . .	Sir Edmund G. Loder, Bart.
18 $\frac{1}{2}$	8 $\frac{3}{8}$	5 $\frac{1}{4}$	Do. . . .	J. Carr Saunders.
18 $\frac{1}{2}$	7 $\frac{5}{8}$	6	North end of Lake Rudolf.	Julius Jeppe.
18 $\frac{3}{8}$	7 $\frac{1}{2}$	14 $\frac{1}{4}$	Tana River . . .	Capt. C. Hankey.
18 $\frac{1}{4}$	8 $\frac{1}{4}$	6 $\frac{3}{4}$	S. Albert Edward Nyanza .	A. H. Sharp.
18 $\frac{1}{8}$	6 $\frac{3}{8}$	5 $\frac{7}{8}$	East Africa . . .	Sir Robert Harvey, Bart.
18	8 $\frac{1}{8}$	5 $\frac{3}{8}$	Do. . . .	F. J. Jackson.
18	8 $\frac{1}{4}$	9	W. of Victoria Nyanza .	Major G. S. M'Loughlin.
18	8 $\frac{1}{4}$	6 $\frac{1}{2}$	East Africa . . .	C. Craig.
17 $\frac{3}{4}$	8	6	Do. . . .	E. Wynstone Waters.
17 $\frac{3}{4}$	...	...	Do. . . .	L. L. Jenner.
17 $\frac{3}{4}$	8	8 $\frac{3}{4}$	Do. . . .	F. C. Selous.
♀ 17 $\frac{1}{2}$	7 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . . .	C. Craig.
² 16 $\frac{5}{8}$	6 $\frac{5}{8}$	6 $\frac{1}{4}$	N. end of Lake Rudolf .	British Museum (A. E. Butter).

¹ Determination provisional.² Albino specimen.



Head of Bontebok.

BONTEBOK (*Damaliscus pygargus*).

Distinguished from the preceding species of the genus by the white blaze on the face, which is continuous from the horns to the nose. Height at shoulder about 40 inches. Weight about 200 lbs. Colour of fore part of back rufous fawn darkening into blackish near the rump, flanks, shoulders, front of limbs, and tail-tuft; rump, upper half of tail, under-parts, and much of hinder surface of limbs white.

The horns very nearly resemble those of the blesbok in shape, but their colour is much darker.

Distribution.—Cape Colony, south of the Vaal River; now nearly exterminated. Although formerly occurring in tens of thousands on the Karoos of Cape Colony and the plains of the Orange River Colony, bontebok are reduced to a single herd preserved on some flats on the estate of Mr. Vander-Byl, near Swellendam, in the south of Cape Colony.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16 $\frac{3}{8}$	6 $\frac{1}{4}$	9 $\frac{1}{8}$	?	British Museum.
16 $\frac{1}{4}$	6 $\frac{5}{8}$	8 $\frac{3}{4}$	Bredasdorp . . .	A. C. Campbell.
¹ 15 $\frac{7}{8}$	6 $\frac{7}{8}$	8	Do.	British Museum (F. C. Selous).

¹ Weight, 200 lbs.; height, 41 $\frac{1}{2}$ at shoulder.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-15 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{8}$	Bredasdorp . . .	Capt. W. Jardine.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Dr. W. P. Y. Bainbrigge.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	5	Do.	A. Ohlsson.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{3}{8}$	Do.	A. C. Humbert.
-15 $\frac{1}{2}$	6 $\frac{3}{8}$	9 $\frac{3}{4}$	Do.	Mr. Justice Hopley.
15 $\frac{3}{8}$	6 $\frac{1}{8}$	8 $\frac{1}{8}$	Cape Colony . . .	Sir Victor Brooke's Collection.
-15 $\frac{1}{4}$	6 $\frac{1}{8}$	9	Bredasdorp . . .	P. C. Keytel.
15	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Cape Colony . . .	F. C. Selous.
15	6 $\frac{3}{8}$	7 $\frac{5}{8}$	Do.	Capt. F. Cookson.
15	6 $\frac{1}{4}$	6 $\frac{3}{4}$	Bredasdorp . . .	W. S. Curtis.
-15	6 $\frac{1}{4}$	7 $\frac{5}{8}$	Do.	Julius Jeppe.
-15	6	9 $\frac{1}{8}$	Do.	Dr. Albert von Stephani.
15	6 $\frac{1}{4}$	10	Do.	A. W. Guthrie.
-14 $\frac{1}{2}$	...	...	Do.	S. African Museum.
♀ 14 $\frac{1}{2}$	5 $\frac{3}{8}$	7 $\frac{5}{8}$	Do.	Julius Jeppe.
-14	5 $\frac{1}{4}$	8	Do.	Major W. Anstruther Thomson.
¹ ♀ 13 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	British Museum (F. C. Selous).
♀ -13	5	6 $\frac{1}{8}$	Do.	Abel Chapman.

¹ Height at shoulder, 36 $\frac{1}{2}$.

BLESBOK (*Damaliscus albifrons*).*Nunni* of the Bechuanas.

Closely allied to the last (of which it may be only a local race), but with less black on the body and limbs, the blaze divided by a white line between the eyes, and the rings on the horns yellowish.

Formerly to be numbered by hundreds of thousands, the beautiful blesbok has in the last thirty years grown very scarce indeed, being only met with in small numbers on a few Boer farms in the Transvaal and the Orange River Colony. Fifty years ago blesboks often literally darkened the face of the land with their innumerable legions. The north of the Cape Colony, Griqualand West, the Orange River Colony, and the plains of the Western and Southern Transvaal were the true home of this beautiful antelope. Gordon Cumming wrote of a sight he beheld in the blesbok country in 1848. "The plains," he says, "exhibited one purple mass of graceful blesboks, which extended without a break as far as my eyes could strain; the depth of their vast legions covered a breadth of about six hundred yards."

Distribution.—Northern plains of Cape Colony, Orange River Colony, Transvaal, and Bechuanaland; now nearly exterminated.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18 $\frac{1}{4}$	5 $\frac{3}{4}$	12 $\frac{1}{4}$	South Africa . . .	Sir Edmund G. Loder, Bart.
-18	6 $\frac{1}{2}$	10 $\frac{3}{8}$	Orange River Colony .	F. R. N. Findlay.
-18	...	...	?	J. Rosen.
-17 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	Transvaal . . .	J. B. Wheelwright.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	7	Do. . . .	Abe Bailey.
-17 $\frac{1}{4}$	6 $\frac{1}{4}$	10 $\frac{1}{8}$	Orange River Colony .	Capt. W. Jardine.
17 $\frac{1}{4}$	7 $\frac{1}{4}$	6 $\frac{1}{2}$	?	B. J. Fitzherbert.
-17	...	8 $\frac{1}{2}$	?	Major W. Anstruther Thomson.
17	6 $\frac{3}{4}$	7	?	F. V. Worthington.
17	7	10	?	J. L. Drège.
-16 $\frac{7}{8}$	7	7 $\frac{1}{2}$	Orange River Colony .	Count E. Hoyos.
16 $\frac{3}{4}$	6 $\frac{3}{4}$	7	?	T. Stephenson.
16 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{7}{8}$	Orange River Colony .	Lieut.-Col. W. H. Sitwell.
-16 $\frac{3}{8}$	6 $\frac{1}{8}$	9 $\frac{1}{2}$	Orange River Colony .	Julius Jeppe.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
♀ -16 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Orange River Colony	Julius Jeppe.
16 $\frac{1}{2}$	7	8	Do. . . .	Capt. H. D. Livingstone.
16 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . . .	Capt. Sandilands.
16 $\frac{1}{2}$	6 $\frac{3}{4}$	6	Do. . . .	Major C. F. Pinney.
-16 $\frac{1}{2}$	6 $\frac{5}{8}$	9 $\frac{1}{2}$	Do. . . .	P. C. Keytel.
-16 $\frac{1}{2}$	...	...	Do. . . .	O. R. Dunell.
16 $\frac{3}{8}$	7	6 $\frac{3}{4}$	Do. . . .	A. E. Croker.
16 $\frac{1}{4}$	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Do. . . .	Lieut.-Col. F. Fitzherbert.
16 $\frac{1}{4}$	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Do. . . .	Capt. G. F. Henry.
16	6 $\frac{3}{4}$	8 $\frac{3}{8}$	Do. . . .	Major Lord Douglas Compton.
-16	...	...	Do. . . .	South African Museum.
-15 $\frac{7}{8}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . . .	Mr. Justice Hopley.
15 $\frac{7}{8}$	6 $\frac{5}{8}$	7 $\frac{3}{4}$	Do. . . .	Lieut.-Col. H. R. Kelham.
15 $\frac{7}{8}$	6 $\frac{1}{4}$	8	Near Steynsburg . .	E. H. E. Abadie.
15 $\frac{3}{4}$	7	7 $\frac{1}{2}$	Orange River Colony	Major C. W. Gartside-Spaight.
15 $\frac{1}{2}$	6 $\frac{7}{8}$	8 $\frac{1}{4}$	Do. . . .	Capt. F. H. Lehmann.
15 $\frac{1}{2}$	5 $\frac{5}{8}$	7 $\frac{1}{2}$	Do. . . .	C. H. Akroyd.
15 $\frac{1}{2}$	6	8	Orange River Colony	Lieut.-Col. J. F. M. Fawcett.
15 $\frac{1}{2}$	6 $\frac{5}{8}$	6 $\frac{1}{2}$	?	Col. R. H. Milne-Redhead.
15 $\frac{1}{4}$	6 $\frac{1}{2}$	¹ 10	Driefontein, Orange River Colony	British Museum (F. C. Selous).
15 $\frac{1}{4}$	6 $\frac{1}{8}$	5 $\frac{3}{4}$	South Africa	Hon. Walter Rothschild.
15 $\frac{1}{4}$	6 $\frac{1}{8}$	6 $\frac{1}{2}$	Zululand	Major-Gen. Sir Arthur Ellis.
♀ 15	5 $\frac{1}{4}$	...	Orange River Colony	Capt. H. D. Livingstone.
15	6 $\frac{3}{4}$	8	Do. . . .	Capt. R. H. Mangles.
-15	5	5 $\frac{3}{4}$	Do. . . .	Abel Chapman.
15	6 $\frac{1}{4}$	7 $\frac{5}{8}$	Do. . . .	Capt. C. R. Staveley.
♀ -14 $\frac{7}{8}$	4 $\frac{3}{4}$	8 $\frac{1}{4}$	Do. . . .	P. C. Keytel.
14 $\frac{1}{2}$	5	5 $\frac{5}{8}$	Do. . . .	A. E. Croker.
♀ 14	4 $\frac{3}{4}$	6 $\frac{5}{8}$	Orange River Colony	Hon. R. A. Ward.
♀ 14	5 $\frac{3}{4}$	5 $\frac{1}{2}$	?	T. Stephenson.

¹ Weight 180 lbs. Height at shoulder, 39 $\frac{1}{2}$ inches.



Head of Sassaby. From a specimen shot in Mashonaland by Mr. F. C. Selous.

SASSABY or BASTARD HARTEBEEST (*Damaliscus lunatus*).

Incolomo of the Matabili.

Ingalowana of the Basutos.

Inkweko of the Masubias.

Inyundo of the Makalakas.

Kaboli in Barotsiland and Lake
Ngami country.

Luchu of the Masaras.

M'tengo in the Chilala and Chibisa
countries.

Mzanci of the Swazis.

Mzanzi of all Zulu tribes

Unchuru of the Makubas.

Horns starting obliquely outwards, with a single upward and backward lunate curve. Height at shoulder nearly 4 feet. General colour dark chestnut-rufous, with the face, shoulders, hips, upper portions of limbs, and tail-tuft black, and the region of the groin and margin of the ears white.

The sassaby has the reputation—in the opinion of all hunters who have tested its speed—of being the fleetest and most enduring animal in South Africa. Were it not that this handsome antelope, in common with its near relative the Cape hartbeest, happens to be lacking in presence of mind, it would very seldom fall to the sportsman's rifle. A troop of sassaby may be often turned from their course, or

brought to a halt, by firing over the heads of the fleeing animals. Or if the leader of the troop be wounded and turned out, the rest of the herd become confused and now and again offer easy shots.

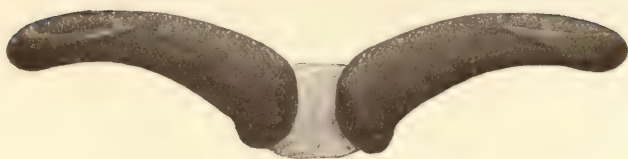
Distribution.—South-East Africa, from north of the Orange River to the Zambesi, westward to Lake Ngami, and northwards to British Central Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-16 $\frac{1}{2}$	8	11	?	J. L. Drège.
16	7 $\frac{3}{4}$	11 $\frac{1}{4}$	?	A. Hugh Bainbridge.
16	7 $\frac{5}{8}$	12 $\frac{3}{4}$	Chinama, B.C.A. . .	Hon. Walter Rothschild.
-16	...	...	?	J. Rosen.
15 $\frac{3}{4}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	Mashonaland . . .	Sir John Willoughby, Bart.
15 $\frac{5}{8}$	7 $\frac{1}{2}$	11 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
-15 $\frac{1}{4}$	7 $\frac{1}{8}$	9 $\frac{1}{4}$	S.E. Africa . . .	Julius Jeppe.
-15 $\frac{1}{4}$	7 $\frac{1}{2}$	13 $\frac{3}{4}$	?	P. C. Keytel.
-15 $\frac{1}{4}$	7 $\frac{1}{8}$	10 $\frac{3}{8}$	Pungwe . . .	Capt. W. Jardine.
15 $\frac{1}{4}$	8	12 $\frac{1}{4}$	S.E. Africa . . .	British Museum (Sir Andrew Smith).
15 $\frac{1}{8}$	7 $\frac{1}{8}$	12	Do. . . .	Sir Victor Brooke's Collection.
15	7 $\frac{1}{2}$	11	?	R. H. Venables Kyrke.
15	8 $\frac{3}{8}$	11 $\frac{5}{8}$	S.E. Africa . . .	G. Richards.
15	7	11	Do. . . .	A. Moseley.
14 $\frac{7}{8}$	8	10	Lebombo Mountains .	F. Vaughan Kirby.
14 $\frac{3}{4}$	7 $\frac{1}{2}$	12 $\frac{3}{4}$	?	A. Gerald Biden.
-14 $\frac{3}{4}$	...	...	Transvaal . . .	Abel Chapman.
14 $\frac{3}{4}$	7 $\frac{1}{2}$	12	North of Delagoa Bay .	A. Cameron.
14 $\frac{1}{2}$	7 $\frac{3}{4}$	9 $\frac{3}{4}$	Pungwe . . .	Capt. Sir K. Fraser, Bart.
14 $\frac{1}{2}$	8 $\frac{3}{8}$	13 $\frac{1}{2}$	?	F. D. Pirie.
14 $\frac{1}{2}$	7 $\frac{3}{4}$	10	Mashonaland . . .	Col. W. A. Peake.
14 $\frac{1}{4}$	7 $\frac{3}{4}$	12 $\frac{1}{2}$	Barotsiland . . .	F. V. Worthington.
-14 $\frac{1}{2}$	8	15 $\frac{1}{4}$	Matabililand . . .	J. Brander Dunbar.
-14 $\frac{1}{2}$	8	15	S.E. Africa . . .	James J. Harrison.
14 $\frac{1}{2}$	7 $\frac{5}{8}$	11	Mashonaland . . .	British Museum (F. C. Selous).

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	7	10	Pungwe	Capt. G. F. Henry.
- ♀ 14 $\frac{1}{2}$	6	9	Matabililand	Dr. W. P. Y. Bainbrigge.
14 $\frac{1}{2}$	7 $\frac{3}{8}$	13	Do.	W. Van Ness.
-14 $\frac{1}{2}$	8 $\frac{1}{4}$	11	Pungwe	Count E. Hoyos.
♀ 13 $\frac{7}{8}$	6 $\frac{5}{8}$	11 $\frac{1}{2}$	Mashonaland	British Museum (F. C. Selous).
♀ 13 $\frac{1}{2}$	6 $\frac{1}{4}$	10 $\frac{1}{4}$	?	F. D. Pirie.
♀ 13 $\frac{1}{2}$	6	9 $\frac{3}{4}$	?	P. C. Keytel.
♀ 12 $\frac{3}{4}$	5 $\frac{3}{4}$	9 $\frac{1}{2}$	S. E. Africa	H. R. H. Prince Pedro d'Orleans et de Braganza.



Horns of Male and Female Blesbok.



Horns of Bull Brindled Gnu. From Mr. Julius Jeppe's specimen.

BRINDLED GNU (*Connochoëtes taurinus*).

Ee-vumba of the Makalakas.

Ikokoni of the Basutos.

Inkone-kone of the Amandebili.

Inkongone of the Swazis and Zulus.

Kokong of the Barotse and Batoka natives.

Minyumbwe of the Batongas.

Numbo of the Masubias.

Nyamba of the Chilala and Chisenga.

Unzozo of the Makubas.

From their near relatives the hartebeests the gnus, or wildebeests, are distinguishable at a glance by their grotesque shape and smooth horns, as they also are by their habits. The short, broad, and massive head has a blunt and bristly muzzle, and tufts of coarse hair on the forehead and chin; the chin-tuft also extending on to the throat. The horns, which are placed on the crown of the head, are approximated at their bases, especially in old bulls, and are nearly smooth, more or less flattened at the bases, but almost cylindrical at the tips; the curvature being at first outwards, or outwards and downwards, and then bending upwards at the tips. An abundant mane of stiff, upright hair clothes the back of the neck; and the tail is covered with longer and softer hairs, reaching considerably below the hocks. It is from the equine form of the tail that these animals were long popularly known by the name of "horned horse." The hoofs are characterised by their narrow form.

The blue wildebeest, as this species is called at the Cape, is a large animal, standing about 4 feet 3 inches at the shoulder. Its most characteristic features are the outward direction of the horns, which are but little expanded at the base, and not unlike those of a buffalo, the uniformly black tail, and the absence of long hair on the under-parts. The general colour varies from grizzled roan to blackish slaty brown, with more or less distinct vertical dark stripes on the sides of the neck and fore-quarters; these stripes being most conspicuous in the lighter-coloured specimens. Typically, the fringe of hair on the throat, like the mane and tuft on the forehead, is black.

Distribution.—Formerly ranging from the north of the Orange River for a long distance up East Africa, the brindled gnu is now practically exterminated in the Orange River Colony and the adjacent districts south of the Limpopo. It is, however, still to be met with in parts of Griqualand West and of the Kalahari, as well as in British Bechuanaland; while in Khama's country and Rhodesia, and thence northwards through Central and East Africa, it is



Head of Brindled Gnu.

comparatively abundant, and it also occurs in Mozambique. In spite of its clumsy and ungainly appearance, the brindled gnu is a rapid mover; and even when severely wounded will not unfrequently succeed in making good its escape from the mounted hunter.

It is generally distributed in South-East Central Africa, and north of the Zambesi is represented by the Nyasaland race (*C. taurinus johnstoni*). Another race is noticed below.

RECORDS OF BIG GAME

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
...	29	31	¹ 13 $\frac{1}{4}$	15 $\frac{1}{4}$	Sabi Flats	Dr. R. P. Mitchell
-33 $\frac{1}{2}$	28 $\frac{3}{4}$	...	6 $\frac{1}{2}$	24	Do.	B. Secretan.
32 $\frac{1}{2}$	29	20	4	26 $\frac{1}{2}$	P. E. Africa	F. Vaughan Kirby.
...	28 $\frac{1}{2}$	21 $\frac{5}{8}$	5 $\frac{1}{4}$	17 $\frac{3}{8}$	Matabililand	G. H. M. Banks.
...	28 $\frac{1}{2}$	20 $\frac{5}{8}$	5	16	Pungwe	C. C. Gouldsmith.
30 $\frac{7}{8}$	26 $\frac{3}{4}$	21	4 $\frac{1}{4}$	21 $\frac{1}{2}$	S. E. Africa	F. H. Barber.
-30 $\frac{3}{4}$	-27	...	4	20 $\frac{3}{4}$	Do.	H. M. von Archer.
30 $\frac{5}{8}$	26 $\frac{3}{8}$	23 $\frac{1}{2}$	5 $\frac{1}{8}$	16 $\frac{3}{4}$	?	Julius Jeppe.
30 $\frac{1}{2}$	26 $\frac{1}{2}$	23 $\frac{1}{2}$	6 $\frac{1}{2}$	18 $\frac{1}{4}$	Do.	F. C. Selous.
...	-27	21	4 $\frac{1}{2}$	20 $\frac{1}{2}$	?	Mr. Justice Hopley.
30 $\frac{1}{2}$	26	22 $\frac{1}{4}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	P. E. Africa	Lieut.-Col. A. Colville.
...	26 $\frac{1}{2}$	21 $\frac{1}{4}$	4 $\frac{5}{8}$	20 $\frac{1}{2}$	Matabililand	Major R. Hayes-Sadler.
...	-26 $\frac{1}{2}$	31 $\frac{1}{4}$	...	17	Delagoa Bay	H. T. and A. H. Glynn.
30	25 $\frac{3}{4}$	21 $\frac{1}{2}$	4 $\frac{3}{4}$	19 $\frac{1}{4}$	Beira	Dr. S. Martin.
30	26 $\frac{1}{4}$	21 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.
30	26	21	4 $\frac{1}{2}$	19 $\frac{1}{4}$	Pungwe	Count R. Coudenrove.
-30	26	...	...	16 $\frac{1}{4}$	Pungwe	F. Lean.
...	25 $\frac{1}{2}$	22	4 $\frac{1}{4}$	17	S. Africa	G. Richards.
♀ ...	25	22 $\frac{1}{4}$	4 $\frac{1}{2}$	10	P. E. Africa	F. Vaughan Kirby.
-29 $\frac{5}{8}$	25 $\frac{7}{8}$	24 $\frac{1}{4}$	4 $\frac{1}{4}$	18 $\frac{5}{8}$	Do.	Capt. M. McNeill.
29 $\frac{1}{2}$	25 $\frac{1}{4}$	20 $\frac{1}{2}$	5	20	Zululand	Lieut.-Col. D. Bruce.
-29 $\frac{1}{4}$	26	...	...	18 $\frac{3}{4}$	Pungwe	C. B. Addison.
29	25 $\frac{1}{2}$	...	3 $\frac{3}{4}$	19	Do.	H.R.H Prince Pedro d'Orleans et de Braganza.
29	24 $\frac{3}{4}$	20 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{3}{4}$	?	A. Hugh Bainbridge.
29	25 $\frac{1}{4}$	21	4 $\frac{1}{2}$	18 $\frac{3}{4}$	Zululand	Lieut.-Col. Hon. W. Coke.
28 $\frac{5}{8}$	24 $\frac{1}{4}$	22	5 $\frac{1}{2}$	19 $\frac{1}{4}$	S. Africa	Sir Edmund G. Loder, Bart.
28 $\frac{1}{4}$	25	...	¹ 11	13	?	F. J. Newnham.
...	24 $\frac{1}{2}$	20 $\frac{1}{2}$	5	17 $\frac{3}{4}$	Matabililand	Rev. Dr. R. J. Nevin.
...	24 $\frac{1}{2}$	20	4	17 $\frac{5}{8}$	Pungwe	P. B. Vander-Byl.
...	24 $\frac{1}{2}$	21	4 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	Marquis of Hamilton.

¹ Circumference.

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
28½	25	20½	4½	19½	Pungwe . .	Capt. T. W. Greenfield.
28½	23½	20½	4½	18½	Do. . .	P. C. Keytel.



Head of Bull Nyasaland Brindled Gnu.
From Sir H. H. Johnston's *British Central Africa*.

¹ 28	24	18¾	4¾	18½	British Central Africa	C. B. C. Storey.
27½	23¾	20½	4	17½	Pungwe . .	P. Niedieck.
¹ 26	21¾	13½	4½	17¾	British Central Africa	Alfred Sharpe.

¹ *C. taurinus johnstoni*.

RECORDS OF BIG GAME

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
26	21 $\frac{3}{4}$	18 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{3}{4}$	Angola . .	C. W. Sharp.
♀ 25 $\frac{7}{8}$	21 $\frac{1}{8}$	18 $\frac{7}{8}$	4	12 $\frac{3}{8}$	Mashonaland .	J. ff Darling.
¹ 25 $\frac{3}{4}$	21 $\frac{1}{2}$	18 $\frac{3}{4}$	4 $\frac{1}{2}$	13 $\frac{1}{2}$	B.C.A. . .	R. H. Storey.
¹ 25 $\frac{1}{2}$	21 $\frac{5}{8}$	17 $\frac{1}{2}$	4	15	Barotseland .	R. T. Coryndon.
¹ -23	20	22 $\frac{1}{2}$	...	14	B.C.A. . .	C. Godfrey.
¹ -22 $\frac{1}{2}$	19 $\frac{1}{4}$	23	...	14	Do. . .	P. Barclay.
¹ ♀ 17 $\frac{1}{4}$	13 $\frac{3}{4}$	12	2 $\frac{3}{4}$	9 $\frac{1}{2}$	Batoka . .	R. T. Coryndon.

¹ *C. taurinus johnstoni*.



Skull and Horns of a male White-Bearded Gnu.

WHITE-BEARDED BRINDLED GNU (*Connochoetes taurinus albojubatus*).Swahili name, *Nyumbu*. Somali name, *Lavagadli*.Masai name, *Engat*.

A local race of the brindled gnu distinguished by its slightly paler coloration, and the yellowish white throat-fringe, a few whitish hairs being also mingled with the mane.

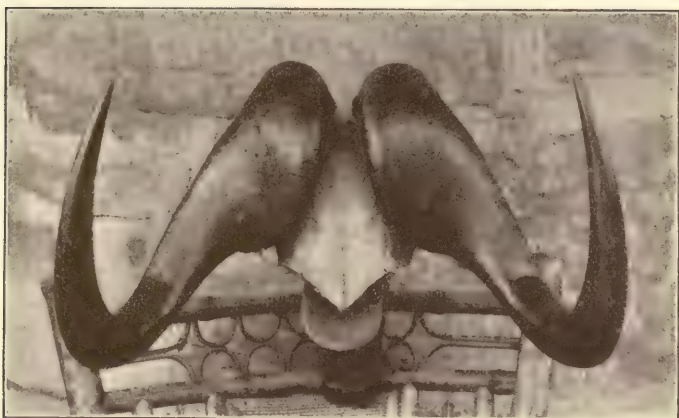
The widest part of the front of the horns is somewhat different from the corresponding portion of the typical race. Weight, clean, about 340 lbs.

Distribution.—East Africa, Athi plains, Ukambani, north of Kilimanjaro.

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
29½	25½	24	5¼	16⅝	East Africa	Sir Edmund G. Loder, Bart.
28⅜	24⅜	21	4⅜	17¼	Do. . .	R. Wahrmann.
27⅜	23⅜	21	5	16	Do. . .	Prince P. Demidoff.
27½	23⅜	21½	4⅜	15¼	Do. . .	C. Craig.
27½	23⅜	20	4⅜	17⅝	Do. . .	R. Meinertzhagen.
27½	...	22	6	15½	Do. . .	Lord Delamere.
27¼	23⅜	18¼	4⅝	19	Do. . .	Lord Alex. Thynne.
27⅛	23⅝	20¼	...	15⅞	Do. . .	O. Neumann.

RECORDS OF BIG GAME

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
27	23	19 $\frac{1}{2}$	4	17 $\frac{3}{4}$	East Africa	Lieut. G. P. Leith, R.N.
-26 $\frac{7}{8}$	23 $\frac{3}{8}$	20 $\frac{5}{8}$	...	11 $\frac{1}{8}$	Do.	Capt. M. M'Neill.
26 $\frac{3}{4}$	23	16 $\frac{1}{4}$	5	20 $\frac{3}{4}$	Do.	A. Bayley-Worthington.
26 $\frac{1}{2}$	23 $\frac{1}{4}$	17 $\frac{3}{4}$	4	18 $\frac{3}{4}$	Do.	F. W. Belt.
26 $\frac{1}{2}$	22 $\frac{3}{4}$	19 $\frac{1}{2}$	4 $\frac{1}{2}$	20	Do.	F. J. Jackson.
26 $\frac{1}{2}$	22 $\frac{5}{8}$	15 $\frac{1}{2}$	4 $\frac{1}{2}$	20	Do.	Capt. D. H. Macdonell.
26 $\frac{3}{8}$	22 $\frac{1}{4}$	20 $\frac{1}{4}$	5	13	Do.	R. H. Fawkes.
26 $\frac{1}{4}$	22 $\frac{3}{4}$	20	4 $\frac{3}{4}$	18 $\frac{1}{4}$	Do.	Lieut. F. C. Grover, R.N.
26 $\frac{1}{4}$	22 $\frac{3}{8}$	...	...	18 $\frac{3}{4}$	Do.	H. C. V. Hunter.
26	21 $\frac{3}{4}$	18 $\frac{3}{4}$	4 $\frac{1}{2}$	16 $\frac{5}{8}$	Do.	Capt. C. P. Foley.
26	22 $\frac{5}{8}$	19 $\frac{1}{4}$	4 $\frac{7}{8}$	18 $\frac{1}{4}$	Do.	Julius Jeppe.
25 $\frac{3}{4}$	22 $\frac{1}{2}$	20 $\frac{1}{4}$	4 $\frac{3}{4}$	15	Do.	E. Wynstone Waters.
25 $\frac{5}{8}$	21 $\frac{3}{4}$	20	5	14 $\frac{1}{2}$	Do.	C. C. Bowring.
25 $\frac{1}{4}$	21 $\frac{1}{2}$	19	4 $\frac{1}{2}$	16 $\frac{1}{4}$	Do.	Major C. U. Price.
25	21 $\frac{3}{4}$	17 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.
25	21 $\frac{1}{4}$	20 $\frac{1}{4}$	4 $\frac{1}{2}$	15 $\frac{1}{4}$	Do.	F. C. Cobb.
24 $\frac{3}{4}$	21	18 $\frac{1}{2}$	5	14	Do.	Major E. J. Tickell.
24 $\frac{3}{4}$	21 $\frac{1}{4}$	19 $\frac{3}{4}$	4 $\frac{1}{2}$	15	Do.	Lord Basil Blackwood.
24 $\frac{3}{4}$	21	19	4 $\frac{1}{2}$	13	Do.	E. N. Buxton.
24 $\frac{3}{4}$	21 $\frac{1}{4}$	18	4 $\frac{3}{4}$	17	Do.	Norman B. Smith.
24 $\frac{3}{4}$	21	18 $\frac{1}{2}$	4 $\frac{1}{2}$	12 $\frac{3}{4}$	Do.	Lieut.-Col. W. A. W. Lawson.
♀ 22 $\frac{3}{4}$	19 $\frac{1}{2}$	16 $\frac{1}{2}$	3 $\frac{1}{4}$	12 $\frac{3}{8}$	Do.	R. E. Wemyss.
♀ 22	18 $\frac{3}{4}$	11 $\frac{3}{4}$	3 $\frac{1}{2}$	17	Do.	Norman B. Smith.
♀ 21 $\frac{3}{4}$	19 $\frac{1}{2}$	16	3	15 $\frac{1}{4}$	Do.	Lord Basil Blackwood.



Horns of White-Tailed Gnu. From Mr. F. H. Barber's specimen.

WHITE-TAILED GNU (*Connochætes gnu*).

This southern species is the true gnu, being formerly known to the Hottentots by that name, while, by the colonists, it is termed the black wildebeest. Its inferior size (height at shoulder about 3 ft. 10 ins.), the downward curvature of the horns at starting and their great expansion at the base, the pure white tail, and the abundant fringe of long hair on the chest and under-parts, serve at once to distinguish it from the brindled gnu. The general colour is uniform deep umber-brown, passing into black. Females are much smaller than males; and have the horns more slender and less expanded at the base.

Distribution.—The northern range of this species was approximately limited by the Vaal, or northern branch of the Orange River. Before the Boer war it was represented only by herds of a few hundred head preserved in Orange River Colony. On the plains of the latter country, as well as on the Karoos of Cape Colony, it was formerly found in vast herds, generally in company with quaggas. Fierce and treacherous in disposition, it was especially characterised by its habit of indulging in grotesque capers and frolics on the approach of strangers.

RECORDS OF BIG GAME

Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
-30 $\frac{7}{8}$	¹ 22 $\frac{1}{2}$	14	Kalahari . . .	Dr. F. H. H. Guillemard.
-30	10 $\frac{1}{2}$	17 $\frac{1}{8}$	?	Mr. Justice Hopley.
-29 $\frac{1}{2}$	6 $\frac{3}{4}$	7	Orange River Colony	Julius Jeppe.
-28	...	...	Colesburg . . .	F. H. Barber. (See illustration.)
-27 $\frac{7}{8}$	7	11	Orange River Colony	Count E. Hoyos.
-27 $\frac{1}{2}$	...	...	Wynburg . . .	F. H. Barber. (See illustration.)
-27 $\frac{1}{2}$	...	...	Victoria W., Cape Colony	South African Museum.
-26 $\frac{3}{4}$	7	14	?	Major W. Anstruther Thomson.
26 $\frac{1}{2}$	8	14 $\frac{1}{2}$	South Africa . . .	Sir Edmund G. Loder, Bart.
-26 $\frac{1}{4}$	8 $\frac{1}{2}$	15	Cape Colony . . .	Grahamstown Museum.
-26 $\frac{1}{8}$	...	11	Orange River Colony	Abel Chapman.
-26	11 $\frac{3}{8}$	16 $\frac{1}{4}$	Orange River Colony	The MacLaine of Lochbuie.
-25 $\frac{1}{2}$	11 $\frac{1}{2}$	17	Do. . . .	J. L. Drège.
25	6 $\frac{3}{4}$	15 $\frac{1}{4}$	Do. . . .	A. Payne-Gallwey.
24 $\frac{1}{2}$	7 $\frac{1}{4}$	18	Orange River Colony	Capt. C. Staveley.
24	8 $\frac{1}{2}$	15	Do.	Hon. Walter Rothschild.
24	8 $\frac{1}{4}$	13 $\frac{1}{4}$	Do.	C. D. Rudd.
23	7 $\frac{3}{4}$	17 $\frac{1}{4}$	Do.	A. H. Neumann.
23	7 $\frac{1}{2}$	15	Do.	Bloemfontein Museum.
23	8	12 $\frac{1}{2}$	Do.	R. T. Coryndon.
23	7 $\frac{3}{4}$	14 $\frac{3}{4}$	Do.	B. J. Fitzherbert.
22 $\frac{3}{4}$	7 $\frac{1}{4}$	15	Do.	F. C. Selous.
22 $\frac{1}{2}$	6	14	Do.	Lieut.-Col. F. Fitzherbert.
22 $\frac{1}{2}$	7 $\frac{1}{2}$	19	Do.	Abel Chapman.
22	7	15 $\frac{1}{4}$	Do.	G. L. Buxton.
22	9	17 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.
22	7 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	F. V. Worthington.
♀ 19 $\frac{3}{4}$	¹ 13 $\frac{1}{2}$	10 $\frac{3}{4}$	Do.	Dr. W. P. Y. Bainbrigge.
♀ 16	4 $\frac{3}{4}$	11 $\frac{1}{2}$	Do.	Bloemfontein Museum.
♀ 16	5	16 $\frac{3}{4}$	Do.	Major C. W. Gartside-Spaight.
♀ 15 $\frac{3}{4}$	5	15 $\frac{1}{4}$	Do.	Lieut.-Col. F. Fitzherbert.
- ♀ 15 $\frac{1}{2}$	5	14 $\frac{3}{4}$	Do.	Julius Jeppe.

¹ Circumference.



Horns of Common Duiker. From a specimen shot by Mr. F. C. Selous.

COMMON DUIKER (*Cephalophus grimmii*).

Puti of the Bechuanas.

Impunzi of the Matabele.

Gwapi of the Chinyanjas.

Impungi of the Swazis and Zulus.

Imputi of the Basutos.

Gudda of the Hausas.

The common duiker, or "diver," is the southern representative of an extensive group of small or medium-sized antelopes, mostly confined to Africa, but also containing one genus and species from India. In all of these the muzzle is naked; face-glands of a more or less elongated form are present, as are lateral hoofs; the tail is of medium length, the knees have no tufts of long hair, and the females are provided with four teats. The horns, which are short and straight, are generally present in both sexes, but are smoother and more slender in the does than in the bucks; and the upper cheek-teeth have low crowns, with square grinding surfaces. The African duikers have a single pair of horns, generally present in both sexes, and more or less hidden by a tuft of long hairs growing from the crown of the head; and the face-glands are arranged to form a bare line of pores on each side of the muzzle. The present species—the true duikerbok—is the largest member of a group of three duikers, characterised by the horns (usually absent in the females) inclining upwards at a sharp angle above the plane of the profile of the nose. Other features of the sub-group are the long and pointed ears, the general yellowish or grayish colour, devoid of dark markings, save for a brown nose-spot. Although essentially a southern form, the common duiker, which measures about 23 inches at the shoulder, ranges on the west coast as far north as Angola, and on the eastern side of the continent to British East Africa and Somaliland. Weight about 30 lbs. Throughout its habitat the timid duiker is to be met with wherever sufficient covert exists; and its furtive, squatting, dodging habits are most aptly indicated by its name. Met with either singly or in pairs, it is never found far

away from covert, strictly avoiding both open plains and steep, rocky mountains. Absence of water is, however, no bar to its existence, as it thrives in the heart of the Kalahari. It is occasionally hunted with foxhounds; its flesh is but moderately good.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-6½	...	...	Angola . . .	E. P. Cooper.
-6	2½	3¼	South Africa . .	James J. Harrison.
-5¾	...	...	Do. . . .	W. J. Corder.
-5½	2½	2½	Do. . . .	Julius Jeppe.
5½	2½	2¾	Selinya, Khama's country	F. C. Selous.
5½	2¼	2¾	Cape Colony . .	Mr. Justice Hopley.
-5½	...	...	British Central Africa.	M. L. M. Vaudin.
-5½	2¼	2¼	Cape Colony . .	J. B. Wheelwright.
5¼	2¼	1½	Zululand . . .	Major L. O. Williams.
-5¼	...	...	?	O. R. Dunell.
-5¼	2½	1¾	?	P. C. Keytel.
-5¼	2½	2	Inyamonga, P.E. Africa	F. Vaughan Kirby.
-5½	2½	1¾	Bredasdorp, C. Colony	Mr. Justice Hopley.
5½	2	2¾	Transvaal . . .	H. T. and A. H. Glynn.
5½	2 11/16	2¾	Cape Flats . . .	Capt. W. Jardine.
5	2¼	2¼	South Africa . .	G. Richards.
5	2¼	2½	Do. . . .	F. C. Selous.
5	2¼	2¼	Angola . . .	C. H. Pemberton.
5	2¼	2½	?	C. C. Bowring.
5	2½	3¼	Northern Rhodesia .	F. Smitheman.
-4¾	...	...	Transvaal . . .	Abel Chapman.
-♀ 4¾	2¾	2¾	?	P. C. Keytel.
4½	2¼	1¾	South Africa . .	Lieut. the Hon. R. O. B. Bridgeman, R.N.
4½	...	2¾	Algoa Bay . . .	British Museum (F. C. Selous)
4½	2½	2½	South Africa . .	R. A. Cooper.
-4½	2¼	2½	Mashonaland . .	A. Ohlsson.
4½	2	1¾	South Africa . .	Capt. L. Rawstorne.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-4 $\frac{1}{2}$	...	...	?	South African Museum.
-4 $\frac{3}{8}$	...	1 $\frac{3}{8}$	?	W. Anstruther Thomson.
4 $\frac{1}{4}$	1 $\frac{7}{8}$	2 $\frac{3}{4}$	East Africa . . .	Sir Robert Harvey, Bart.
4 $\frac{1}{4}$	2 $\frac{1}{4}$	2	Do. . . .	F. W. Belt.
4 $\frac{1}{8}$	1 $\frac{7}{8}$	2	Lake Mivern . . .	Hon. Walter Rothschild.
4	2 $\frac{1}{4}$	2	East Africa . . .	R. J. Church.
4	2	1 $\frac{7}{8}$	Do. . . .	F. J. Jackson.
♀ 4	1 $\frac{3}{8}$	1 $\frac{1}{4}$	North of Great Nama-qualand	Th. Rehbock.
-3 $\frac{5}{8}$	...	...	Upper Nile . . .	Capt. C. A. Sykes.
3 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Sudan	Col. B. T. Mahon.
♀ 3 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	Transvaal	Julius Jeppe.

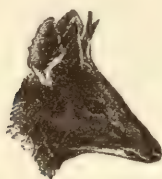
ABYSSINIAN DUIKER (*Cephalophus abyssinicus*).

Abyssinian name, *Midaku*.

Belonging to the same sub-group as the common duiker, and agreeing with the crowned duiker (*C. coronatus*) in size, this species differs from the latter by the general colour of the fur being grayish brown, instead of bright yellow. It was discovered by the traveller Rüppell, and its habits have been well described by Mr. W. T. Blandford in his *Geology and Zoology of Abyssinia*.

Distribution.—The highlands of Abyssinia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{4}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	Abyssinia	W. F. Whitehouse.
4 $\frac{1}{8}$	2	2	Galla Country . . .	Lord Hindlip.
4 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	Abyssinia	P. H. G. Powell-Cotton.
-3 $\frac{9}{16}$	2 $\frac{3}{16}$	2 $\frac{1}{8}$	Do. . . .	Prince A. de Lucinge.
-3 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
-3 $\frac{5}{16}$	2	1 $\frac{1}{2}$	Galla country . . .	Viscount Edmond de Poncins.
2 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{1}{4}$	Abyssinia	British Museum.



Head of Blue Duiker.

BLUE DUIKER (*Cephalophus monticola*).*Ipiti* of all the Zulu tribes.

In the great majority of the duikers, that is to say all except the three included in the group mentioned above, the horns, which are generally present in both sexes, slope backwards either in or just below the line of the profile of the nose. The present species is included in a sub-group characterised by the smoky-brown or blackish coloration, and is especially distinguished by the rufous legs and uniformly coloured rump, the height at the shoulder being 13 inches. Weight about 8 lbs. clean.

Distribution.—Southern Africa, from the wooded districts of Cape Colony northwards to Benguela on the west, and Nyasaland on the east.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-2½	...	1½	Cape Colony . .	F. Vaughan Kirby.
2½	1¾	1½	Tushila Plain, B.C.A.	Hon. Walter Rothschild.
-2¼	...	...	Knysna, Cape Colony	South African Museum.
-2⅔	1⅝	1¾	Do. . .	J. L. Drège.
-2⅔	1½	1⅝	Do. . .	Mr. Justice Hopley.
2	...	1¾	Natal . .	F. C. Selous.
2	1⅝	1¾	Benguela . .	G. W. Penrice.
-2	1½	1¼	?	P. C. Keytel.
-2	...	...	?	O. R. Dunell.
-1⅞	...	...	?	W. J. Corder.
1¾	1⅝	1⅝	Benguela . .	Hon. Walter Rothschild.
-1¾	1¼	1¾	?	A. Ohlsson.
-1¾	1⅞	1½	Knysna . .	Lieut. Hon. R. O. B. Bridgeman, R.N.
-1⅝	1⅝	1⅞	?	Julius Jeppe.
♀ 1⅞	1⅞	1⅞	Knysna . .	Lieut. Hon. R. O. B. Bridgeman, R.N.

MAXWELL'S DUIKER (*Cephalophus maxwelli*).

This species belongs to the sub-group characterised by the smoky-brown or blackish colour. In size it is small (height at shoulder about 14 inches). The face is coloured like the back; the limbs, like the body, are grayish brown; and the rump is not parti-coloured. It was first brought to England by Col. C. Maxwell, and described by Major Hamilton Smith in 1827.

Distribution.—West Africa, from Gambia to the Gold Coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1 $\frac{5}{8}$	2 $\frac{1}{8}$	2	Fanti	Hon. Walter Rothschild.

RED or NATAL DUIKER (*Cephalophus natalensis*).

Rooi-Bosch-bokje of the Boers. *Msumbi* of the Swazis and Malonga.
Mkumbi of the Zulus. *Izikupu* of the Basutos.
Chisimbi of the Lower Zambesi natives.

This duiker is classed in another sub-group of small or medium-sized species characterised by the fulvous, rufous, or chestnut ground-colour; and is specially distinguished by its small size (height at shoulder, 17 inches) and completely uniform coloration, having no dark markings on either the face or body.

Distribution.—Natal, Transvaal, and Mashonaland (including all the forest and bush country of the East Coast), also seen by F. Vaughan Kirby and James J. Harrison near the Lualwa River, Mozambique Province.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-3 $\frac{7}{8}$	2 $\frac{3}{4}$	2	?	Julius Jeppe.
-3 $\frac{3}{8}$	2 $\frac{7}{8}$	2 $\frac{1}{4}$	Shupanga Forest	F. Vaughan Kirby.
3 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{8}$	Sabi Flats	James J. Harrison.
-3 $\frac{1}{4}$	2 $\frac{1}{2}$	2	?	P. C. Keytel.
-3 $\frac{1}{4}$	3	2	Foothills of Kahlamba . . .	F. Vaughan Kirby.
-3 $\frac{1}{4}$	2 $\frac{7}{8}$	2 $\frac{3}{8}$	?	Julius Jeppe.
-3 $\frac{1}{4}$	2 $\frac{5}{8}$	2 $\frac{1}{4}$	Spitzkop	H. T. and A. H. Glynn.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
- ♀ 2 $\frac{3}{4}$	1 $\frac{7}{8}$	1	Foothills of Kahlamba	F. Vaughan Kirby.
- ♀ 1 $\frac{3}{4}$	1 $\frac{3}{4}$	$\frac{3}{4}$	?	P. C. Keytel.
♀ 1 $\frac{5}{8}$	...	1	Near Durban	F. C. Selous.
♀ 1 $\frac{5}{8}$	1 $\frac{7}{8}$	2	?	Hon. Walter Rothschild.

BAY DUIKER (*Cephalophus dorsalis*).

From the last species the bay duiker, together with some allied West African forms, differs by the presence of a black stripe running along the back and continued to the tail. As a species, its special characters are the dark colour of the hams, and the evenly haired tail, which shows no sign of a tuft, and is parti-coloured.

Distribution.—West Africa, from Sierra Leone to the Cameroons ; there being a northern and a southern race.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{4}$	2 $\frac{1}{2}$	2	West Africa	Hon. Walter Rothschild.

BANDED DUIKER (*Cephalophus dorisæ*).

The tiger-like transverse black bands on the orange ground of the back suffice to distinguish at a glance this pretty little duiker from all its kindred.

Distribution.—The interior of the West Coast of Africa from Liberia to Sierra Leone, where it is commonly known as the mountain deer.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-1 $\frac{7}{8}$	...	1	Liberia	British Museum (Dr. J. Büttikofer).
1 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.

YELLOW-BACKED DUIKER (*Cephalophus sylvicultor*).

This species is distinguished from all the other members of the genus by its large size, coupled with its blackish coloration, and the presence of a yellowish crest and similarly coloured longitudinal patch on the rump. Height at shoulder, 34 inches.

Distribution.—The West Coast of Africa from Liberia to Angola

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
7	3½	...	Sierra Leone . . .	Capt. C. E. Palmer.
6¾	...	4½	Fanti . . .	British Museum.
6⅝	3¾	3⅝	Luapulu River, N.E. Rhodesia	G. M. E. Leyer.
6¼	3½	...	Ashanti . . .	C. Beddington.
5½	3⅜	4⅛	Gaboon . . .	Sir Edmund G. Loder, Bart.
-5½	3⅞	3½	Do. . .	Major W. Anstruther Thomson.
5	3¾	4¼	Angola . . .	Hon. Walter Rothschild.
5	3¾	4⅛	Do. . .	G. W. Penrice.
4¾	3¼	...	Johnston's Falls . . .	J. Yule.

HARVEY'S DUIKER (*Cephalophus harveyi*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3½	2¾	2⅝	East Africa . . .	Capt. R. A. J. Montgomerie, R.N.
2⅝	3⅞	1¾	Do. . .	E. N. Buxton.
2	2	...	Kilimanjaro . . .	F. W. Belt.

RED-FLANKED DUIKER (*Cephalophus rufilatus*).

The following measurements of a male red-flanked duiker were taken by Lieut.-Col. P. S. Wilkinson.

Shoulder to heel . . .	14½ ins.
Length of face . . .	6¼ "
Tail to head . . .	23¾ "
Tail . . .	5½ "

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3⅞	2⅞	2⅝	Gambaga, Gold Coast	British Museum (Capt. W Giffard).
3⅝	2½	2	Nigeria . . .	Capt. P. A. Clive.
3	2⅞	1½	Okutu, S. Borgu . . .	Capt. B. R. M. Glossop.
2⅞	2½	2	Borgu, Nigeria . . .	Capt. G. H. F. Abadie.
2⅝	2¼	1¾	Lokoja, Nigeria . . .	Lieut.-Col. P. S. Wilkinson.
2⅞	2½	1¼	Lagos . . .	C. Vyvyan.
2¼	2⅞	1⅞	Togoland . . .	Hon. Walter Rothschild.

WEST AFRICAN DUIKER (*Cephalophus coronatus*).

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{7}{8}$	Nigeria . . .	Major J. A. Burdon.
$4\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{4}$	Do. . . .	Capt. G. H. F. Abadie.
$4\frac{3}{8}$	$2\frac{1}{2}$	$1\frac{3}{8}$	Okuta, S. Borgu .	Capt. B. R. M. Glossop.
$4\frac{1}{8}$	$2\frac{1}{4}$	2	Nigeria . . .	N. F. Bayne.
$4\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	Do. . . .	Capt. W. D. Wright.
$4\frac{1}{8}$	$2\frac{5}{16}$	$2\frac{1}{4}$	. Near Borgu, West Africa . . .	Capt. N. C. Welch.
4	$1\frac{3}{4}$	1	Between Benue and Lake Chad . .	Hon. Walter Rothschild.
$3\frac{9}{16}$	2	$1\frac{7}{8}$	Lokoja, Niger .	Lieut.-Col. P. S. Wilkinson.



Horns of Male Four-horned Antelope.

FOUR-HORNED ANTELOPE or CHOUSINGHA (*Tetraceros quadricornis*).

This antelope is the Oriental representative of the African duikers, from which it is distinguished by the following features. Typically there are two pairs of horns, and the face-glands form deep slits on the sides of the face instead of a long naked line; the females being hornless. Height at shoulder about 25 inches, and weight about 40 lbs. General colour dull rufous brown, becoming whitish beneath, with the muzzle, the outer surface of the ears, and a line down the front of each leg blackish brown, and some white on the outer side of the pasterns. The front horns are not unfrequently mere knobs, and may even be wanting, as in most of the Madras and Kathiawar specimens.

Distribution.—Peninsular India south of the Himalayas.

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear.	Fore.	Rear.	Fore.	Rear.	Fore.		
—5	...	...	...	...	...	Jhalawar . .	H.H. Maharaj Rana Bahadur of Jhalawar.
—4½	2½	2¼	1¾	2½	1	Lulitpur . .	General Walker.
4½	2¼	2¾	2¼	3	...	?	Capt. J. C. B. Statham.
4¾	2½	2¼	2¾	1¾	2¾	India . .	Sir Edmund G. Loder, Bart.

RECORDS OF BIG GAME

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear.	Fore.	Rear.	Fore.	Rear.	Fore.		
-4 $\frac{1}{8}$	1 $\frac{1}{2}$	...	...	...	...	India . . .	J. D. Inverarity.
4	2 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	3	1 $\frac{1}{8}$	Indore . . .	British Museum (Col. J. Evans).
4	2	3	1 $\frac{7}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{2}$	Karkote Jungle, near Mhow	Lieut.-Col. G. D. F. Sullivan.
-4	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	...	?	Major L. Impey.
-3 $\frac{3}{4}$	...	...	...	...	...	?	Indian Museum.
-3 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{5}{8}$	...	Central Provinces .	Lt.-Col. R. W. Mapleton.



Head of Male Four-horned Antelope.



Head of Salt's Dik-dik.

SALT'S DIK-DIK (*Madoqua saltiana*).

This species, the Beni Israel of the Arabs, is the typical representative of a group of tiny, slenderly-built antelopes characterised by the elongated, trunk-like nose, of which the tip is almost entirely hairy, the tuft of hair on the crown of the head, the short and almost rudimentary tail, and the minute size of the lateral hoofs. In the present species the last tooth in the lower jaw lacks the third lobe found in almost all ruminants, the muzzle is but moderately developed, and the general colour fulvous or rufous fawn, scarcely more rufous on the sides than on the back. Height at the shoulder, 14 or 15 inches.

Distribution.—The Coast Range of Eastern Abyssinia, and adjacent districts of Somaliland.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{8}$	Abyssinia . . .	V. Bell.
3	1	1	Do. . . .	Sir Edmund G. Loder, Bart.
$2\frac{3}{4}$	...	$1\frac{3}{8}$	Do. . . .	P. H. G. Powell Cotton.
$-2\frac{5}{8}$	$1\frac{1}{2}$	1	Do. . . .	J. B. Wheelwright.
$2\frac{5}{8}$	...	$1\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
$2\frac{1}{2}$	$1\frac{1}{2}$	...	North Kassala . . .	Col. Ralph Vivian.
$2\frac{1}{2}$	1	$1\frac{1}{4}$	?	P. C. Keytel.
$2\frac{3}{8}$	...	$1\frac{5}{8}$	?	British Museum.



Skull of Phillips's Dik-dik.



Head of Swayne's Dik-dik.

SOMALI DIK-DIKS (*Madoqua swaynei*, *M. phillipsi*, and *M. guentheri*).General native name, *Sakdro*.

Different districts of Somaliland are inhabited by the three species of dik-diks above named. The first of these is allied to Salt's dik-dik, but is of smaller size; it inhabits the northern half of Somaliland. Phillips's dik-dik, which also occurs in Northern Somaliland, is intermediate in size between Salt's and Swayne's dik-dik, from both of which it is distinguished by having the back gray and the sides and shoulders rich rufous or cinnamon. On the other hand, Günther's dik-dik is widely different from both, being nearly allied to the under-mentioned Kirk's dik-dik, from which it is distinguished by the form of the nasal bones in the skull.

Height at shoulder about 14 inches. Weight, ♂ 6 lbs.;
♀ 5 lbs. (T. W. H. Clarke).

Sakdro Guyu (*Madoqua swaynei*).

Distribution.—Berbera District.

Sakdro Gol-Ass (*Madoqua phillipsi*).,, Northern Somali-
land.*Sakdro Gussuli* (*Madoqua guentheri*).,, Plateau of Central
Somaliland.

Length on front.	Girth.	Tip to Tip.	Owner.
¹ 3 $\frac{5}{8}$	1 $\frac{5}{8}$	2	Col. H. D. Olivier.
3 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{5}{8}$	J. Kenneth Foster.
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{3}{4}$	W. W. Ashley.
¹ 3 $\frac{1}{4}$	...	1 $\frac{1}{4}$	C. V. A. Peel.
3 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	Major C. F. Blane.

¹ *M. guentheri*.

Length on front.	Girth.	Tip to Tip.	Owner.
¹ 3 $\frac{1}{8}$	...	1 $\frac{3}{8}$	Julius Jeppe.
¹ -3 $\frac{1}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	A. E. Pease.
-3 $\frac{1}{8}$	...	...	J. Brander Dunbar.
3	...	1	Sir Edmund G. Loder, Bart.
-3	...	1 $\frac{3}{4}$	Viscount Edmond de Poncins.
-2 $\frac{1}{16}$	1 $\frac{1}{2}$	1 $\frac{1}{8}$	Do.
2 $\frac{1}{16}$	1 $\frac{1}{2}$	$\frac{7}{8}$	Major E. G. Harrison.
-2 $\frac{7}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	J. Johnston-Stewart.
2 $\frac{7}{8}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	Lord Delamere.
2 $\frac{7}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	Lord Hindlip.
2 $\frac{3}{4}$	1	1	T. W. H. Clarke.
2 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{8}$	A. E. Butter.
2 $\frac{3}{4}$	1 $\frac{1}{2}$	...	C. Liddell.
¹ 2 $\frac{3}{4}$	...	1 $\frac{1}{16}$	Major W. Anstruther Thomson.
¹ -2 $\frac{1}{8}$	1 $\frac{1}{8}$	1 $\frac{3}{4}$	Julius Jeppe.

¹ M. phillipsi.

The following are the dimensions of a specimen of *M. guentheri*:—

Length, 23 $\frac{1}{4}$. Height, 15 $\frac{1}{4}$. Horns, 2 $\frac{1}{2}$. Weight, 8 $\frac{1}{4}$ lbs.

Shot at Njemps, 26:9:96, by F. J. Jackson.



Kirk's Dik-dik.

KIRK'S DIK-DIK (*Madoqua kirki*).

This dik-dik belongs to a small group of species differing from the one containing *M. saltiana* by the presence of three lobes to the last tooth of the lower jaw, and likewise by the more decidedly trunk-like character of the muzzle. Of the other members of the group, *M. damarensis* differs by its superior size, and *M. guentheri* by the still greater development of the trunk. Weight about 7 lbs.

Distribution.—East Africa, from Southern Somaliland to Ugogo, most numerous on the coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{1}{8}$	Rift Valley . .	C. Steuart Betton.
3 $\frac{1}{2}$	1 $\frac{5}{8}$	...	East Africa . .	Prince P. Demidoff.
3 $\frac{7}{16}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	Do. . . .	J. B. Wheelwright.
1 3 $\frac{3}{8}$	...	1 $\frac{1}{2}$	Do. . . .	F. C. Selous.
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	E. of Lake Chomo .	Lord Hindlip.
3	...	1 $\frac{1}{2}$	East Africa . .	F. J. Jackson.
1 2 $\frac{1}{16}$	1 $\frac{3}{4}$	1 $\frac{1}{4}$	?	F. J. Jackson, C.B.
2 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	Tana River . .	Capt. C. Hankey.
2 $\frac{1}{2}$	...	1 $\frac{5}{8}$	East Africa . .	British Museum.
2 $\frac{1}{2}$	...	1 $\frac{5}{8}$	Lake Elmeteita .	Rhys Williams.
1 2 $\frac{1}{4}$	...	1 $\frac{1}{4}$	Lake Baringo . .	Do.

1 *M. cavendishi*.

DAMARA DIK-DIK (*Madoqua damarensis*).

Characteristics mentioned under heading of the preceding species.

Distribution.—Damaraland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-3 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	?	P. C. Keytel.
-3	...	...	?	Capt. M. Jurich.
-2 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	Omararu	J. B. Wheelwright.
-2 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	Do.	Capt. W. Jardine.
-2 $\frac{1}{2}$	...	...	Damaraland	Cape Town Museum (type specimen).
-2 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	Do.	A. Ohlsson.
2	...	1 $\frac{1}{8}$	Angola	South African Museum.

. **HEMPRICH'S DIK-DIK** (*Madoqua hemprichiana*).

Further information is desirable as to the right of this form to specific distinction.

Length on front.	Circumference.	Tip to Tip	Locality.	Owner.
3 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{1}{2}$	Basa Land	Hon. Walter Rothschild.
2 $\frac{5}{16}$	1 $\frac{3}{8}$	1 $\frac{1}{16}$	Abyssinia	Do.



Head of Male Oribi from Pungwe, South-East Africa.

CAPE ORIBI (*Oribia scoparia*).

Inla of the Swazis and Zulus. *Pulukudukamani* of the Basutos.
Kamunda of the Barotse and Batoka natives.

The oribis, grysbuck, klipspringer, and their allies constitute a group of comparatively small African antelopes presenting the following characters in common. The muzzle has a naked tip, the head is devoid of a tuft of hair, large face-glands open beneath the eyes by a small aperture on each side, the tail is short or moderate, and lateral hoofs may or may not be retained. Horns are present only in the bucks, and are short, almost, or quite, straight, with smoothed tips and ridged bases. The upper cheek-teeth have tall and narrow crowns. The dik-diks are nearly allied, but differ by their tufted heads, and elongated hairy muzzles. The oribis, which are the largest members of the group, have normal hoofs and hair, and are specially distinguished by the presence of a bare glandular spot beneath each ear, and of a large opening in the skull beneath each eye-socket. In the Cape species the horns of the bucks are comparatively smooth and slender, with only their basal two inches slightly ridged; the tail being tufted and moderately bushy, with its terminal two-thirds black. Height at shoulders, 24 inches.

Distribution.—Typically, Africa south of the Zambesi. On grassy plains this graceful little antelope is still plentiful in many districts.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner
-7½	2¾	2⅝	Zomba, B.C.A.	D. MacAlpine.
7⅞	2⅞	2¼	Angola	G. W. Penrice.
6½	...	2⅞	Near Ladysmith	Lieut.-Col. P. J. R. Crampton.
-6½	...	1¾	Batoka Plateau	E. Folley.
-6½	...	3¼	?	J. L. Drège.
6¼	2¼	...	E. Griqualand	British Museum (Jff. Darling)
6	2½	2¼	Spitzkop	H. T. and A. H. Glynn.
-6	...	...	Natal	South African Museum.
6	2	2⅝	Angola	C. H. Pemberton.
6	...	2⅝	Do.	Do.
-6	...	2⅝	Do.	E. P. Cooper.
-6	...	...	British Central Africa	J. Rosen.
-51⅞	2	2½	?	Mr. Justice Hopley.
5¾	2⅝	2⅝	British Central Africa	J. H. Hayes.
5¾	2	3¼	Barotsiland	H. Timmins.
5⅝	2	2¾	Bangueolo	F. Smitheman.
5⅝	2⅞	1⅞	Transvaal	F. R. N. Findlay.
5¼	2	2⅝	Barotsiland	Capt. J. Carden.
-5½	1⅞	3¼	?	Julius Jeppe.
-5½	2	2½	Gorongosa, P. E. Africa	F. Vaughan Kirby.
-5½	1⅞	3½	?	A. Ohlsson.
5½	2	2¾	M'peta Island, Upper Zam- besi	R. T. Coryndon.
5¼	2	2¼	Barotsiland	F. V. Worthington.
-5¼	...	...	?	O. R. Dunell.
5¼	2½	2½	Pungwe	Surgeon H. E. Fryer, R.N.
5⅞	2	1⅞	?	George Grey.
-6	...	3	Batoka Plateau	E. Folley.



Skulls of Abyssinian Oribi. Shot by P. H. G. Powell Cotton.

ABYSSINIAN ORIBI (*Oribia montana*).

Fäckō of the Abyssinians.

Mori of the Dinkas.

Very similar in most characters to the Cape species, but with a shorter and less bushy tail, the tip of which has only a few sparse black hairs. Height at shoulder, $22\frac{1}{2}$ inches. These antelopes are shy and rarely seen in the open, preferring the thick bush and long grass. If disturbed they go at a great pace with their heads quite close to the ground. The flesh is good.

Viscount Edmond de Poncins states that a fine male weighed 30 lbs. 13 oz., and stood $19\frac{1}{2}$ inches at the shoulder.

Distribution.—Abyssinia and Bogosland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$5\frac{3}{8}$	2	$2\frac{5}{8}$	Abyssinia . . .	Julius Jeppe.
5	$2\frac{1}{2}$	$2\frac{1}{4}$	Galla Country . . .	Lord Hindlip.
5	...	$2\frac{1}{2}$	Abyssinia . . .	Sir Edmund G. Loder, Bart.
$4\frac{3}{4}$	$2\frac{3}{8}$	$2\frac{1}{4}$	White Nile . . .	Capt. C. J. Hawker.
$4\frac{7}{8}$	$2\frac{3}{8}$	2	Hawash, Abyssinia . . .	Prince A. de Lucinge.
$4\frac{5}{8}$	22	...	Sudan . . .	Prince Colloredo Mannsfeld.
$4\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{3}{8}$	White Nile . . .	C. Cookson.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{4}$	White Nile . . .	Capt. the Hon. M. P. Macnaghten.
$4\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	Do. . . .	H. Cookson.
$-4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Jubaland . . .	Major E. G. Harrison.
$-4\frac{1}{2}$	2	2	Hawash, Abyssinia .	Viscount Edmond de Poncins.
$4\frac{3}{8}$	2	$2\frac{5}{8}$	Abyssinia . . .	P. H. G. Powell Cotton.
$-4\frac{1}{2}$	...	$1\frac{7}{8}$	Do. . . .	Major W. Anstruther Thomson.
$4\frac{3}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	White Nile . . .	Major R. M. Sanders.
$4\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	Dombelas, Abyssinia .	British Museum.
$4\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	Abyssinia . . .	W. F. Whitehouse.
$4\frac{1}{8}$	$2\frac{1}{4}$	$1\frac{3}{4}$	Sudan . . .	Count J. Potocki.
4.12	2.2	2.3	Do. . . .	Prince Henry of Liechtenstein.

WEST AFRICAN ORIBI (*Oribia nigricaudata*).

The present species is very close to the Abyssinian oribi, but of smaller size, grayer, and with a distinct black tip to the tail, as in the Cape species. Height at shoulder, 20 inches.

Distribution.—The open country of Senegal and Gambia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	Lake Chad . . .	S. B. B. Dyer.
$4\frac{1}{10}$	$1\frac{7}{8}$	2	Nigeria . . .	F. Dwyer.
4	$1\frac{3}{4}$	2	Do. . . .	Capt. H. A. Porter.
4	...	$2\frac{3}{4}$	Do. . . .	Major J. A. Burdon.
$3\frac{7}{8}$	$1\frac{5}{8}$	$2\frac{1}{4}$	Do. . . .	F. P. Crozier.
$3\frac{1}{2}$	$1\frac{7}{8}$	$1\frac{3}{4}$	Do. . . .	Major A. H. Festing.
$3\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	Borgu . . .	Capt. G. H. F. Abadie.
$3\frac{5}{8}$	$1\frac{5}{8}$	$2\frac{1}{4}$	Nigeria . . .	Lieut.-Col. P. S. Wilkinson.

HAGGARD'S ORIBI (*Oribia haggardi*).

Swahili name, *Taya*.

Still imperfectly known, but distinguished from all the other oribis by the stouter horns, which are strongly ridged for rather more than the basal half of their length. Height at shoulder about 24 inches.

Distribution.—The coast districts of East Africa in the neighbourhood of Lamu. Discovered in 1887 by Mr. J. G. Haggard.

Length on front	Circumference.	Tip to Tip.	Locality.	Owner.
5 $\frac{7}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	East Africa . . .	R. Wahrmann.
-5 $\frac{3}{4}$	2 $\frac{3}{4}$	2 $\frac{5}{8}$	Tana River . . .	Major E. G. Harrison.
5 $\frac{5}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$	East Africa . . .	C. Craig.
5 $\frac{1}{2}$	...	2 $\frac{7}{8}$	Do. . . .	C. C. Bowring.
-5 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
5 $\frac{3}{8}$	...	2 $\frac{3}{8}$	Do. . . .	Dr. A. Paget.
¹ 5 $\frac{1}{8}$	2 $\frac{1}{4}$	2	East Central Africa . .	Hon. Walter Rothschild.
¹ 5 $\frac{1}{8}$	1 $\frac{1}{8}$	2 $\frac{3}{8}$	North end of Lake Albert .	Col. Trevor Ternan.
5	2	2 $\frac{1}{4}$	East Africa . . .	E. Wynstone Waters.
5	1 $\frac{7}{8}$	2 $\frac{1}{2}$	Do. . . .	F. C. Selous.
4 $\frac{7}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	Do. . . .	Capt. H. de Pree.
4 $\frac{1}{8}$	..	2 $\frac{1}{8}$	Do. . . .	Capt. J. Ponsonby.

¹ Determination provisional.

ZANZIBAR SUNI (*Nesotragus moschatus*).

The two elegant little antelopes included in the genus *Nesotragus* are near relatives of the oribis, from which they are distinguished by the absence of a naked glandular patch below the ear and the want of lateral hoofs. They are further characterised by the horns being directed backwards nearly or quite in the plane of the face, and extending at least as far as the back of the head, as also by the large size of the empty spaces in the skull below the sockets of the eyes, and by the nasal bones. In the present species the horns are short and slender, and the colour, inclusive of the tail-tip, fawn gray. Height at shoulder about 13 inches.

Distribution.—Islets near Zanzibar and adjacent coast from Kilimanjaro to Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{4}$	1 $\frac{1}{2}$	2	Islands, Zanzibar . .	Sir John Kirk.
3 $\frac{1}{4}$	1 $\frac{3}{8}$	1 $\frac{1}{2}$	Do. . . .	British Museum (Capt. Speke).
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	Do. . . .	British Museum (Sir John Kirk).
-3 $\frac{1}{8}$	...	1 $\frac{1}{8}$	Zanzibar . . .	Major E. G. Harrison.
2 $\frac{1}{2}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	Kikuyu . . .	F. J. Jackson.
2 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{4}$	Zanzibar . . .	Sir Victor Brooke's Collection.



Skull and Horns of Livingstone's Suni.

LIVINGSTONE'S SUNI (*Nesotragus livingstonianus*).*Lumswi* of the Shupanga.*Intilengana* of the Amatonga.

Distinguished from the preceding species by its slightly superior dimensions (height at shoulder, 15 inches), the longer and thicker horns, more rufous coloration, and the blackish upper surface of the tail.

Two specimens killed by F. Vaughan Kirby measured—

	Male.	Female.
Extreme length over all, tip of nose to end of tail	27 $\frac{1}{8}$ ins.	25 $\frac{3}{4}$ ins.
Length of tail	3 $\frac{1}{2}$ "	3 "
Perpendicular shoulder-height	14 $\frac{1}{4}$ "	13 $\frac{1}{8}$ "
" height at croup	14 $\frac{3}{4}$ "	14 $\frac{1}{4}$ "
Girth of neck	6 $\frac{1}{2}$ "	6 "
" behind the shoulder	14 $\frac{1}{8}$ "	13 $\frac{5}{8}$ "

Distribution.—South-East Africa, from Mozambique to Zululand; the form from Zululand being distinguished as *N. livingstonianus zuluensis*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{5}{8}$	2	2 $\frac{1}{4}$	?	Julius Jeppe.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Shupanga Forest	F. Vaughan Kirby.
4 $\frac{1}{2}$...	1 $\frac{3}{4}$?	F. J. Newnham.
4 $\frac{3}{8}$	2 $\frac{1}{8}$...	Gungunyana's country	British Museum (H. T. Glynn).

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Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-4 $\frac{3}{8}$	Delagoa Bay	F. H. Barber.
-4 $\frac{1}{4}$	...	...	?	O. R. Dunell.
-4 $\frac{1}{4}$	...	1 $\frac{3}{4}$	?	P. C. Keytel.
-4 $\frac{1}{8}$	...	1	Delagoa Bay	F. C. Selous.
-4 $\frac{1}{8}$	...	2	?	J. B. Wheelwright.
-4	...	...	?	W. J. Corder.
-4	...	...	Shupanga Forest	M. L. M. Vaudin.
3 $\frac{3}{4}$	1 $\frac{3}{4}$	2	?	C. D. Rudd.
-3 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	Zambesi	Sir Edmund G. Loder, Bart.
-3 $\frac{3}{4}$	...	...	Delagoa Bay	Capt. W. Jardine.
3 $\frac{11}{16}$	1 $\frac{3}{4}$	2 $\frac{5}{16}$	Do.	Hon. Walter Rothschild.



Head of Grysbuck, from a specimen shot by Mr. F. C. Selous.

GRYSBUCK (*Rhaphiceros melanotis*).

Isikupi of the Basutos.

From the other members of the oribi group the grysbuck and its cousin the steinbuck are readily distinguished by the horns rising nearly vertically from the skull, in which the open spaces below the eye-sockets are unusually small. Curiously enough, the grysbuck retains the lateral hoofs, which have disappeared in the steinbuck. In addition to this feature, the former is distinguished by the fur showing a large admixture of white, instead of being uniformly coloured. Height at shoulder, 22 inches. Weight, 24 lbs.

Distribution.—South Africa, extending as far north as the Zambesi and Mozambique.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$4\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{7}{8}$	?	R. A. Cooper.
$-4\frac{5}{8}$	...	$1\frac{3}{4}$	?	P. C. Keytel.
$4\frac{1}{2}$	$1\frac{3}{4}$	2	?	Lieut.-Col. H. J. G. Lloyd.
-4	...	...	Caledon, C.C.	South-African Museum.
-4	...	...	?	J. Rosen.
$3\frac{5}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Knysna, C.C.	Lieut. the Hon. R. O. B. Bridgeman, R.N.
$3\frac{9}{16}$	$1\frac{3}{4}$	$1\frac{7}{8}$	Cape Colony	F. C. Selous. (See illustration.)
$-3\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{3}{8}$	Knysna, C.C.	Mr. Justice Hopley.
$3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	?	Sir H. J. Goold-Adams.



Head of Steinbuck.

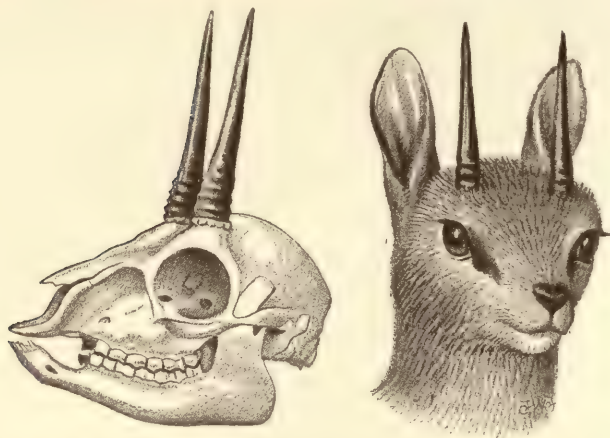
STEINBUCK (*Rhaphiceros campestris*).*Ishah* of the Swahilis.*Impulupudi* of the Basutos.*Ingaina* of the Swazis.*Phudukudu* of the Bechuanas.*Timba* of the Barotse and Batoka natives.*Umgwena* of the Matabili.

As mentioned above, this species is at once distinguished from the grysbuck by the absence of the lateral hoofs and the uniform colour of the fur. The general tint of the latter is bright sandy rufous, becoming richer on the head, and frequently with the tip of the muzzle and a horseshoe-mark on the crown brown. Height at withers about $19\frac{1}{2}$ inches. Weight about 25 lbs.

Distribution.—Africa south of the Zambesi on the east, and the Cuneni on the west; northwards of the Tana to Nyasaland represented by Neumann's steinbok (*R. campestris neumanni*), distinguished by the absence of dark markings on the head. Probably owing to its small size, the steinbuck has managed to escape the fate that has befallen so many of the South African antelopes. Wherever the traveller journeys on the veldt, he is almost certain to meet this species, which may be regarded as the most familiar game animal of the plains. Like many of its kindred, it is independent of water, and can thus exist in the heart of the Kalahari, where water may not occur for a distance of fully fifty miles.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-6 $\frac{7}{8}$	...	...	Graffreinett . . .	F. H. Barber.
-5 $\frac{7}{8}$	...	...	Kikumbulin . . .	W. Russell Bowker.
-5 $\frac{7}{8}$	1 $\frac{7}{8}$	3	?	Mr. Justice Hopley.
51 $\frac{3}{8}$	...	2 $\frac{5}{8}$	Near Middleburg . .	E. H. E. Abadie.
-5 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	?	J. Whitaker.
-5 $\frac{5}{8}$	2	1 $\frac{1}{4}$	?	Julius Jeppe.
¹ 5 $\frac{1}{2}$	...	1 $\frac{9}{16}$	Kimberley . . .	F. C. Selous.
-5 $\frac{1}{2}$	...	...	?	O. R. Dunell.
-5 $\frac{1}{2}$	...	1 $\frac{3}{4}$	East Africa . . .	C. Steuart Betton.
-5 $\frac{1}{2}$	...	3 $\frac{1}{8}$	Do. . . .	Capt. M. M'Neill.
5 $\frac{7}{16}$	...	2 $\frac{5}{8}$	Cape Colony . . .	British Museum.
5 $\frac{3}{8}$	2	1 $\frac{3}{4}$	East Africa . . .	E. Gedge.
-5 $\frac{3}{8}$	...	...	?	J. Rosen.
5 $\frac{1}{4}$	...	1 $\frac{1}{2}$	South Africa . . .	J. B. Neilson.
5 $\frac{1}{4}$	1 $\frac{7}{8}$	2 $\frac{3}{8}$	Do. . . .	Lord R. Wellesley.
-5 $\frac{1}{4}$	...	...	?	South African Museum.
-5 $\frac{1}{4}$	1 $\frac{3}{8}$	2 $\frac{7}{8}$	Cape Colony . . .	F. R. N. Findlay.
-5 $\frac{1}{4}$	...	...	?	P. C. Keytel.
5 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	East Africa . . .	F. C. Selous.
4 $\frac{5}{8}$	1 $\frac{3}{4}$	3	Gilgil, E. Africa . .	Rhys Williams.
4 $\frac{5}{8}$	1 $\frac{1}{2}$	2 $\frac{3}{4}$	Portuguese E. Africa .	F. Vaughan Kirby.
4 $\frac{5}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	South Africa . . .	G. Richards.
4 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{8}$	?	Sir H. J. Goold-Adams.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	South Africa . . .	H. and C. Beddington.
4 $\frac{1}{2}$	1 $\frac{5}{8}$	2 $\frac{5}{8}$	Do. . . .	F. C. Selous.
-4 $\frac{1}{2}$	...	...	Masailand . . .	Major E. G. Harrison.
4 $\frac{1}{2}$	1 $\frac{7}{8}$	2	South Africa . . .	Major C. F. Minchin.
4 $\frac{3}{8}$	1 $\frac{5}{8}$	2 $\frac{3}{8}$	Tana Valley . . .	Sir Robert Harvey, Bart.

¹ Killed with hounds.



Skull and Head of Male Klipspringer, from specimens shot in Somaliland by Major H. G. C. Swayne.

KLIPSPRINGER (*Oreotragus saltator*).

Alakud of the Somalis.

Chipomco of the Chilalas.

Chinkomo of the Chinyanjas.

Ingululu of the Makalakas.

Ikumi of the Basutos.

Klipbok of the Boers.

Ligoka of the Zulus and Swazis.

Njerere in the Batoka country.

Sassa of the Abyssinians.

Not only from the other members of the oribi group, but from antelopes of all kinds, the agile little klipspringer, or "rock-jumper," is distinguished by the peculiar conformation of its hoofs and the structure of its hair. The former are large, cylindrical, blunt, and so situated in regard to the rest of the limb, that the animal walks on what corresponds to their tips in other antelopes, the whole hoof thus rising vertically from the ground. As regards the hair, this may best be compared with that of the musk-deer, having the same brittle, pithy structure. Lateral hoofs are retained; the tail is reduced to a mere rudimentary stump; and the horns of the bucks rise nearly vertically from the head, with a slight forward curvature, and are ringed for their basal third. The speckly olive-gray hue of the fur is too well known to need description. Height at shoulder from about 20 to 22 inches.

Distribution.—Mountainous and rocky districts in South and East Africa, from the Cape northwards to Abyssinia. Klipspringer-shooting is the best mountain sport to be obtained in Africa; and a pair of these active little animals bounding, as if made of indiarubber,

from rock to rock is a sight never to be forgotten. To bag these exceedingly active and shy little antelopes, the sportsman, especially in the steep mountain ranges of Cape Colony, must, however, be prepared for a long and difficult stalk under a blazing sun. Except when they require its hair for stuffing saddles, the Boers leave the klipspringer alone; which is doubtless one reason that it is still comparatively abundant. Its venison is of excellent quality.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5 $\frac{3}{8}$	2 $\frac{1}{8}$	2 $\frac{7}{8}$	Mashonaland . . .	The late H. H. Eyre.
5 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	Transvaal . . .	F. Vaughan Kirby.
-4 $\frac{5}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	Julius Jeppe.
4 $\frac{1}{2}$	2 $1\frac{3}{16}$	2 $1\frac{1}{16}$	Wittberg, Cape Colony	H. A. Bryden.
4 $\frac{1}{2}$	2	3 $\frac{1}{4}$	East Africa . . .	E. Gedge.
-4 $\frac{1}{2}$	...	...	?	J. L. Drège.
-4 $\frac{1}{2}$	...	...	?	J. W. Corder.
4 $\frac{3}{8}$	1 $\frac{3}{8}$	2 $\frac{1}{4}$	Matabililand . . .	Hon. R. A. Ward.
4 $\frac{3}{8}$	2	3 $\frac{1}{4}$	S.E. Africa . . .	F. C. Selous.
4 $\frac{1}{4}$	2	3 $\frac{5}{8}$	Near Lake Rudolf . .	H. S. H. Cavendish.
-4 $\frac{1}{4}$	2 $\frac{1}{2}$	3	Somaliland . . .	C. V. A. Peel.
-4 $\frac{1}{4}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	South Africa . . .	A. Ohlsson.
-4 $\frac{1}{4}$	1 $\frac{5}{8}$	2 $\frac{7}{8}$	Do. . . .	Mr. Justice Hopley.
4 $\frac{1}{8}$	2	2 $\frac{1}{2}$	Somaliland . . .	Sir Edmund G. Loder, Bart.
4 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	North Nyasaland . .	James Yule.
4	1 $\frac{1}{2}$	2	East Africa . . .	Lord Delamere.
4	1 $\frac{7}{8}$	2 $\frac{1}{8}$	?	Mr. Justice Hopley.
4	2 $\frac{1}{8}$	1 $\frac{1}{4}$	Matabililand . . .	W. W. Ashley.
4	2 $\frac{1}{2}$	1 $\frac{7}{8}$	South Africa . . .	H. and C. Beddington.
3 $\frac{7}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{4}$	Abyssinia . . .	P. H. G. Powell Cotton.
3 $\frac{3}{4}$	2	2 $\frac{1}{4}$	East Africa . . .	J. Gardiner Muir.
3 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{3}{8}$	Somaliland . . .	Prince Boris Czetwertynski.
3 $\frac{3}{4}$	2	2	Do. . . .	T. W. H. Clarke.
3 $\frac{3}{4}$	...	1 $\frac{7}{8}$	Abyssinia . . .	British Museum.
3 $\frac{3}{4}$	2 $\frac{3}{8}$	3 $\frac{1}{4}$	South Africa . . .	Dr. W. P. Y. Bainbrigge.



Horns of Waterbuck.

COMMON WATERBUCK (*Cobus ellipsiprymnus*).

Chuzu in the Chilala and Chizenga countries. *M'dongoma* or *Matutwi* in the Barotse country.

Kring-gaat of the Dutch.

Swahili name *Kuru*.

Li Tumogha of the Matabili.

Tumoga of the Bechuanas.

The waterbucks and their smaller allies the kobs, together with the reedbucks and vaal rhebok, constitute a well-defined group of large or medium-sized African antelopes presenting the following characteristics. They have the muzzle naked, no face-glands, a moderately long tail, well-developed lateral hoofs, and the horns confined to the bucks. In shape and size the horns are variable, being either long or medium, but never spirally twisted, and always with smooth tips, below which they are ridged; usually they are at first inclined somewhat backwards, after which they are curved upwards and more or less forwards, although they may have a sinuous curvature, and in the vaal rhebok are straight. The upper cheek-teeth are tall and narrow. In the

waterbucks and kobs, which include the largest representatives of the group, there are no naked patches on the head below the ears, the tail is comparatively long, with a slight terminal tuft, and the lateral hoofs are large. A characteristic feature of the skull is the presence of a deep hollow in the forehead. From its allies the true or common waterbuck is recognisable at a glance by the elliptical white ring on the buttocks, which extends downwards to the thighs. Height at shoulder from 48 to 53 inches. Weight about 360 lbs. clean.

Distribution.—Africa north of the Limpopo along the eastern coast region as far as the Shebeyli River in Somaliland; thus including Nyasaland and British and German East Africa. Never, apparently, very abundant, this handsome antelope, whose head and horns form one of the chief prizes of the South African hunter, has had its range much curtailed of late years. Its present strongholds are the unhealthy districts between the Sabi and Zambesi, the affluents of the latter river, and the Chobi, Okavango, and other rivers above Lake Ngami.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
36 $\frac{1}{4}$	8 $\frac{3}{4}$	20 $\frac{1}{4}$	Delagoa Bay . . .	F. H. Barber. (See illustration.)
-36 $\frac{1}{4}$	...	...	South Africa . . .	O. R. Dunell.
-35 $\frac{1}{4}$	9	14	?	Mr. Justice Hopley.
-34 $\frac{1}{2}$	...	...	Limpopo Valley, S.E. Africa	H. T. and A. H. Glynn.
-33 $\frac{7}{8}$	...	...	Do.	J. da Gama Cruz.
-33 $\frac{1}{2}$	10 $\frac{1}{8}$	21 $\frac{3}{8}$	Do.	F. Vaughan Kirby.
33 $\frac{1}{2}$	9 $\frac{1}{4}$	21 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
33	9 $\frac{3}{8}$	11 $\frac{1}{2}$	Mashonaland . . .	British Museum (F. C. Selous).
33	8 $\frac{3}{4}$	24	Do. . . .	J. G. Millais.
-33	8 $\frac{3}{4}$	17 $\frac{1}{4}$	Do. . . .	A. Ohlsson.
-33	...	...	Lake Ngami . . .	South-African Museum.
32 $\frac{3}{4}$	9 $\frac{3}{4}$	21 $\frac{3}{8}$	South Africa . . .	Sir Victor Brooke's Collection.
32 $\frac{1}{2}$	9 $\frac{1}{2}$	29 $\frac{1}{2}$	Barotsiland . . .	R. T. Coryndon.
31 $\frac{3}{4}$	9 $\frac{1}{4}$	24	Zululand . . .	Major L. O. Williams.
-31 $\frac{3}{4}$	8 $\frac{1}{4}$	21 $\frac{7}{8}$	North of Pungwe . .	Count E. Hoyos.
-31 $\frac{1}{2}$	9	17	?	Julius Jeppe.
-31 $\frac{1}{2}$	...	16 $\frac{3}{8}$	Batoka Plateau . .	S. M. L. O'Keefe.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
31 $\frac{1}{4}$	10 $\frac{1}{8}$	13 $\frac{5}{8}$	Pungwe	Earl of Dunmore.
31 $\frac{1}{4}$	9 $\frac{5}{8}$	19 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
31	9 $\frac{1}{2}$	22	Zululand	R. D. Talbot.
-31	...	...	Transvaal	Abel Chapman.
31	9 $\frac{1}{2}$	22	Mashonaland	F. C. Selous.
-31	9 $\frac{3}{4}$	17	E. C. Africa	James J. Harrison.
30 $\frac{3}{4}$	8	23 $\frac{1}{4}$	Pungwe	Major Lord Douglas Compton.
30 $\frac{1}{2}$	8 $\frac{3}{4}$	25	B. C. Africa	S. Robins.
-30 $\frac{1}{2}$	9	26	Do. . . .	Julius Jeppe.
30 $\frac{3}{8}$	9 $\frac{1}{8}$	23 $\frac{1}{2}$	Zululand	A. J. Brandon.
-30 $\frac{1}{8}$	...	...	Macloutsie	Major G. F. T. Leather.
30 $\frac{1}{8}$	8 $\frac{1}{2}$	13 $\frac{7}{8}$	Mashonaland	F. C. Selous.
-30 $\frac{1}{8}$	9 $\frac{1}{2}$	11 $\frac{1}{4}$	Komati River, S. Africa .	Count E. Hoyos.
-30	8 $\frac{1}{8}$	27 $\frac{1}{2}$	P. E. Africa	Capt. M. M'Neill.
29 $\frac{7}{8}$	9 $\frac{1}{8}$	12 $\frac{7}{8}$	Zululand	Hon. Charles Ellis.
-29 $\frac{3}{4}$	...	...	Somaliland	Dr. Donaldson Smith.
-29 $\frac{9}{16}$	9 $\frac{7}{16}$	19 $\frac{11}{16}$	Danakil	Prince A. de Lucinge.
-29 $\frac{1}{2}$	9 $\frac{1}{2}$	14	East Africa	Lieut. A. A. Ellison, R.N.
29	8 $\frac{1}{2}$	32 $\frac{3}{4}$	Do. . . .	Rhys Williams.
29	10 $\frac{3}{4}$	16	Sabi River	Sir Thomas Fowler, Bart.
29	9 $\frac{1}{2}$	26	East Africa	E. Gedge.
29	9 $\frac{1}{2}$	16 $\frac{1}{2}$	Do. . . .	Major W. H. Williams.
28 $\frac{3}{4}$	8 $\frac{1}{2}$	23	Lake Baringo	H. Hyde-Baker.
28 $\frac{3}{4}$	8	27	Shiré Valley	Lieut.-Col. H. H. Williams.
27 $\frac{3}{4}$	8	18	Somaliland	A. E. Butter.
26 $\frac{1}{4}$	8 $\frac{3}{4}$	21	Do. . . .	H. Z. Darrah.



Skull of Male Sing-sing Waterbuck, from a Semliki.

SING-SING WATERBUCK (*Cobus defassa*).

Gürümes of the Gallas.

Tambiür of the Dinkas.

Distinguished from the common waterbuck (*C. ellipsiprymnus*) by the presence of a large white patch on the lower part of the buttocks, instead of a white elliptical ring extending higher up. Four more or less distinct local races of this species may be recognised. First, the West African sing-sing (*C. defassa unctuosus*), of Senegal and Gambia, characterised by its rufous colour and the small amount of white in the region of the eye. Second, Crawshay's sing-sing (*C. defassa*

crawshayi), from British Central Africa, with a dusky coloration. Third, Penrice's sing-sing (*C. defassa penricei*), from the interior of Benguela, Angola, in which the colour is so dark as to be almost black. And, fourth, the defassa sing-sing (*C. defassa typicus*), extending from Western Abyssinia through Sennar, Kordofan, and the valley of the White Nile to Uganda and British and German East Africa, in which the ears are longer and more pointed, and there is more white in the region of the eye than in the other races; the general colour being rufous. The four races are frequently regarded as distinct species, but they are so evidently local modifications of a single somewhat variable form that it appears far preferable to include them all under a single specific heading.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ -35½	...	...	Near Toru . . .	Major C. G. H. Sitwell.
31½	8¼	26	White Nile . . .	Col. B. T. Mahon.
31¾	8	20¾	Do. . . .	S. H. Whitbread.
31¾	9	21	Semliki Valley . . .	Capt. R. A. Markham.
30½	8¼	19½	White Nile . . .	Major R. M. Sanders.
30	8¼	18	Do. . . .	R. M'D. Hawker.
29½	8¾	18¾	Do. . . .	Capt. the Hon. M. P. Macnaghten.
-29¾	8½	29¾	Do. . . .	Count T. Palffy.
29¼	8	17½	?	Douglas M'Douall.
-29¼	8½	17	Lake Abaya . . .	O. Neumann.
-29½	9¾	22¼	Semliki Valley . . .	Sir W. Garstin.
29	8½	15¾	White Nile . . .	G. H. Cheetham.
29	8¾	21½	British East Africa . . .	Major E. J. Tickell.
29	8	16¾	Abyssinia . . .	P. H. G. Powell Cotton.
-29	8	6½	?	Julius Jeppe.
² 29	9	22	Lake Mweru . . .	Hon. Walter Rothschild.
29	8½	20¾	Abyssinian Sudan . . .	Prince Colloredo Mannsfeld.
28¾	8½	17¼	White Nile . . .	Count E. Hoyos.
28½	9	19	Uganda . . .	P. B. Vander C. Byl.
28½	8	22¾	White Nile . . .	Major C. E. Wilson.

¹ Mr. F. R. Hicks favours me with this measurement.

² Cobus crawshayi.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
28½	8¾	20	White Nile	Capt. C. J. Hawker.
-28½	...	28¾	Do.	Sir W. Gordon Cumming, Bart.
28¼	9¼	17¼	?	A. E. Butter.
-28¼	...	19	Bahr-el-Zaraf	Sir W. Garstin.
28	7¾	15	White Nile	Lieut.-Col. W. H. Sitwell.
28	7¾	18½	Do.	C. Adeane.
28	8¾	9¼	Do.	W. D. James.
28	8½	12¾	Wadelai	Major M. L. Carleton.
-27⅞	8⅞	9⅞	Sudan	Count T. Palffy.
27¾	8½	15¼	East Africa	C. Craig.
27⅞	8⅞	13½	?	British Museum.
27½	8⅞	19½	East Africa	J. K. Baas.
27½	...	...	Do.	R. J. Church.
27½	9	17	Sudan	Capt. H. H. S. Morant.
-27¼	9	12	East Africa	Lord Delamere.
27¼	8¾	23	Sudan	Lieut.-Col. A. Colville.
27	8	15¼	Kavalli, Lake Albert .	Col. Trevor Ternan.
27	8½	20	S.E. Victoria Nyanza .	O. L. Beringer.
27	8⅞	13¼	East Africa	W. F. Whitehouse.
27	8⅞	17	White Nile	Lord St. Oswald.
27	8½	9¾	Sudan	H. F. Buxton.
-27	9½	20¾	Do.	Prince Henry of Liechtenstein.
-27	...	...	Upper Nile	Capt. C. A. Sykes.

CRAWSHAY'S SING-SING (*Cobus defassa crawshayi*).

24½	8⅞	13	N.-W. Rhodesia . . .	R. T. Coryndon.
23¼	8½	13	Do.	F. W. Worthington.
23¼	8	13¾	Do.	Julius Jeppe.
22¾	8	17½	Do.	James Yule.

WEST-AFRICAN SING-SING (*Cobus defassa unctuosus*).*Gumbasa* of the Hausas.

Height at shoulder, 47 to 48 ins.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29 $\frac{1}{2}$	7 $\frac{1}{4}$	23	Nigeria	Lieut.-Col. P. S. Wilkinson.
29 $\frac{1}{2}$	8 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	R. Marmon.
27 $\frac{3}{4}$	8	15	Gambia	H. North.
26	7 $\frac{1}{2}$	20	Nigeria	J. C. Parker.
25 $\frac{5}{8}$	6 $\frac{5}{8}$	18	Gambia	H. L. Stephen.
25 $\frac{1}{2}$	7 $\frac{3}{4}$	13 $\frac{3}{4}$	Nigeria	Capt. H. A. Porter.
25 $\frac{1}{2}$	7	18 $\frac{1}{2}$	Do.	Capt. J. F. Loder-Symonds.
-25	...	15	Gambia	Sir Edmund G. Loder, Bart.
24 $\frac{3}{4}$	8 $\frac{1}{2}$	13 $\frac{3}{4}$	Do.	Julius Jeppe.
24 $\frac{1}{2}$	8 $\frac{1}{4}$	19	Do.	H. C. Goddard.

PENRICE'S SING-SING (*Cobus defassa penricei*).

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29	8 $\frac{3}{4}$	18 $\frac{1}{2}$	Benguela	G. W. Penrice.
-28 $\frac{1}{2}$	8 $\frac{3}{4}$	20	Do.	E. P. Cooper.
-28 $\frac{1}{4}$	8 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	A. Ohlsson.
28	8	22 $\frac{1}{2}$	Do.	G. W. Penrice.
24 $\frac{1}{2}$	8	9 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.
20 $\frac{1}{4}$	6 $\frac{7}{8}$	12 $\frac{1}{4}$	Do.	Julius Jeppe.



Head of Mrs. Gray's Kob.

MRS. GRAY'S KOB (*Cobus maria*).

With this species we come to the smaller waterbucks, or kobs ; the present animal being distinguished by the long slender darkly curved horns, which are ridged nearly to the tips, and the blackish brown body-colour of the old bucks. This dark colour is relieved by a whitish patch in front of the withers, the yellowish ears, a yellowish

white patch in front of and behind each eye, and the yellowish muzzle, chin, and throat. The limbs and much of the under-parts are wholly dark coloured. Height at shoulder about 38 inches.

Distribution.—The swamps bordering the White Nile and its tributaries

It is only of late years that this handsome species has been well represented in collections.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
32	$6\frac{7}{8}$	...	Near Junction of Bahr-el-Gebel and White Nile	Capt. H. N. Dunn.
-30 $\frac{1}{2}$	$6\frac{1}{2}$	17	?	Berlin Museum.
-29 $\frac{7}{8}$	$6\frac{3}{8}$	9 $\frac{1}{2}$	?	Imperial Museum, Vienna.
29 $\frac{3}{4}$	$6\frac{1}{4}$	12	?	Hon. Walter Rothschild.
29 $\frac{1}{4}$	$6\frac{1}{4}$	18 $\frac{1}{4}$	Near Junction of Bahr-el-Gebel and White Nile	Capt. H. N. Dunn.
29	$7\frac{3}{4}$	12 $\frac{3}{4}$	?	Lieut.-Col. E. G. T. Bainbridge.
29	7	16	Tonga Island, White Nile	Capt. W. Hayes-Sadler.
-29	$6\frac{1}{2}$	17	Bahr-el-Ghazal . .	Sir W. Garstin.
28	$6\frac{3}{4}$	14 $\frac{3}{4}$	?	E. C. Crispin.
27 $\frac{3}{4}$	$6\frac{3}{4}$	21 $\frac{1}{2}$	Bahr-el-Ghazal . .	Major R. M. Sanders.
27 $\frac{1}{4}$	7	17 $\frac{3}{4}$	?	Major C. E. Wilson.
27	$7\frac{3}{4}$	17 $\frac{1}{2}$	Bahr-el-Ghazal . .	Hon. Walter Rothschild.
26 $\frac{7}{8}$	$6\frac{7}{8}$	13 $\frac{3}{4}$	Arwan, Bahr-el-Ghazal	British Museum (Consul J. Petherick).
26 $\frac{1}{2}$	$6\frac{1}{2}$	12	White Nile.	Lieut.-Col. Hon. W. Coke.
26 $\frac{1}{4}$	7	14	Bahr-el-Ghazal . .	J. H. Whitehouse.
26 $\frac{1}{4}$	$6\frac{1}{2}$	13	Peebo River . .	The late Capt. H. G. Majendie.
24 $\frac{3}{4}$	...	...	Near Junction of Bahr-el-Gebel and White Nile	British Museum (Capt. H. N. Dunn).



WHITE-EARED KOB (*Cobus leucotis*).

Hamaraia dyl of the natives.

Teel of the Dinkas.

The old bucks of this smaller species are of the same blackish brown colour as those of *C. maria*, but have no light patch in front of the withers, and are further distinguished by the ears, a large patch extending from the same to surround each eye, the muzzle, chin, upper portion of the throat, the under-parts, and portions of the inner and front surfaces of the limbs being pure white. Moreover, the direction of the hair is reversed from the loins instead of from the

middle of the back. Young bucks and females are red. Height at shoulder about 34 or 35 inches.

Distribution.—The region of the Upper Nile, including the Sobat, Bahr-el-Ghazal, and their tributaries.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{3}{4}$	White Nile	E. C. Crispin.
-21 $\frac{5}{8}$	7 $\frac{7}{8}$	13 $\frac{1}{10}$	Do.	Paris Museum.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	12	Do.	R. M'D. Hawker.
21 $\frac{1}{4}$	6 $\frac{7}{8}$	11	Do.	Capt. W. Hayes-Sadler.
21 $\frac{1}{4}$	6 $\frac{1}{4}$	8	Do.	Major R. M. Sanders.
-21	7 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	E. N. Buxton.
20 $\frac{3}{4}$	6	8 $\frac{1}{4}$	Do.	Capt. H. N. Dunn.
20 $\frac{3}{4}$	6	9 $\frac{3}{4}$	Do.	British Museum (Capt. H. N. Dunn).
20 $\frac{1}{2}$	5 $\frac{7}{8}$	9 $\frac{1}{4}$	Sobat River	The late Capt. H. G. Majendie.
20 $\frac{1}{2}$	7	12	White Nile	Lieut. W. B. Drury, R.N.
-20 $\frac{1}{2}$	7	11-15	Do.	Prince Henry of Liechtenstein.
-20 $\frac{1}{4}$	...	8 $\frac{5}{8}$	Do.	Major W. Anstruther Thomson.
20	6 $\frac{1}{4}$	8 $\frac{1}{4}$	Do.	Capt. R. A. Markham.
20	6 $\frac{1}{2}$	13 $\frac{3}{4}$	Do.	Lieut.-Col. E. G. T. Bainbridge.
20	6 $\frac{1}{4}$	10 $\frac{1}{4}$	Do.	Count. E. Hoyos.
20	6 $\frac{1}{2}$	12 $\frac{1}{4}$	Do.	P. Niedieck.
20	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Hon. N. Charles Rothschild.
-20	7	7 $\frac{1}{2}$	Do.	Berlin Museum.
19 $\frac{1}{4}$	5 $\frac{1}{4}$	14	Do.	G. H. Cheetham.
-19 $\frac{1}{8}$	6 $\frac{1}{4}$	13	Do.	Sir W. Garstin.
-19	6 $\frac{5}{8}$	7 $\frac{5}{8}$	Do.	Julius Jeppe.
18 $\frac{3}{4}$	5 $\frac{3}{4}$	10 $\frac{3}{8}$	Do.	J. Carr Saunders.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	Do.	Major Hon. W. Guinness.
18	6	9	Do.	Count E. Hoyos.
18	6 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.



Frontlet and Horns of Buffon's Kob.

BUFFON'S KOB (*Cobus cob*).

Maria of the Hausas.

In common with the Uganda kob and puku kob, this species has the back of the ears rufous like the body; and it agrees with the former of these in having the horns less than twice the length of the head, the hair short, and the front of the fore-legs black; its peculiar distinctive features being the presence of a white line over each eye and its comparatively small size, the approximate height at the shoulder being from 32 to 33 inches.

Distribution.—West Africa, from the Gambia to Nigeria.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
—20	...	12	Benue . . .	Capt. W. de L. Williams.
19 $\frac{3}{4}$	7 $\frac{3}{8}$	9	Lake Chad . . .	Col. T. L. N. Morland.
19 $\frac{3}{4}$	6 $\frac{7}{8}$	7 $\frac{1}{4}$	Nigeria . . .	Major A. H. Festing.
19 $\frac{1}{2}$	6 $\frac{3}{4}$	13	Lake Chad . . .	J. C. Parker.
19	6 $\frac{1}{2}$	11	Do. . . .	S. B. B. Dyer.
18 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Nigeria . . .	Captain J. S. Brogden.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	11	Niger . . .	Major R. H. Beddoes.
18 $\frac{1}{2}$	6	8 $\frac{1}{2}$	Benue River . .	Major J. A. Burdon.
18	6 $\frac{3}{8}$	9 $\frac{1}{4}$	Cameruns . . .	Sir Edmund G. Loder, Bart.
18	6	8 $\frac{3}{4}$	Nigeria . . .	R. S. M'Clintock.
17 $\frac{3}{4}$	6	12	Do.	Capt. J. F. Loder Symonds.
17 $\frac{3}{4}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Do.	Dr. F. W. Chesnaye.
17 $\frac{5}{8}$	7 $\frac{3}{8}$	6	Do.	Capt. J. K. Cochrane.
17 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{3}{8}$	Cameruns . . .	Hon. Walter Rothschild.
17 $\frac{1}{2}$	5 $\frac{3}{4}$	9 $\frac{1}{4}$	Lake Chad . . .	Capt. D. F. MacCarthy Morrogh.
17 $\frac{3}{8}$	5 $\frac{3}{4}$	6 $\frac{3}{4}$	Do.	Hon. Walter Rothschild.
17 $\frac{1}{4}$	6 $\frac{1}{4}$	9	?	P. C. Keytel.
17	6 $\frac{1}{4}$	7 $\frac{3}{4}$	Nigeria . . .	Julius Jeppe.
16 $\frac{3}{4}$	6 $\frac{1}{4}$	11	Do.	Capt. H. A. Porter.
16 $\frac{3}{4}$	5 $\frac{1}{2}$	8	Ibi District . .	Carl Jeppe.



Skull of Uganda Kob.

UGANDA KOB (*Cobus thomasi*).

The East African representative of Buffon's kob, from which it is distinguished mainly by its superior size, and the presence of a complete white ring round each eye, instead of having only a white line above the same. General colour rich fulvous, with the muzzle, lips, chin, under-parts, and inner surfaces of upper portion of fore-legs and thighs white; front of fore-legs with a black line, and hind-legs with a similar line, which does not, however, ascend within some distance of the hocks. Height at shoulder about $35\frac{1}{2}$ inches.

Distribution.—East Africa, from Kavirondo to Uganda.

Native name, *Sunu* or *N'Sunu*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
24 $\frac{1}{4}$	7 $\frac{1}{8}$	12	Wadelai . . .	Capt. G. A. S. Cape.
23 $\frac{1}{2}$	7 $\frac{1}{4}$	6 $\frac{3}{4}$	Mruli . . .	Capt. J. Ponsonby.
22 $\frac{3}{4}$	7 $\frac{1}{8}$	11 $\frac{1}{2}$	Uganda . . .	Capt. C. A. Sykes.
22	7	7 $\frac{1}{4}$	Do. . . .	P. B. Vander-Byl.
21 $\frac{3}{4}$	7 $\frac{3}{4}$	9	Do. . . .	Capt. R. A. Markham.
21 $\frac{1}{2}$	8	9 $\frac{3}{4}$	Do. . . .	Douglas M'Douall.
21 $\frac{1}{2}$	7 $\frac{5}{8}$	9	Do. . . .	Capt. R. A. Markham.
21 $\frac{1}{4}$	...	12 $\frac{3}{8}$	Do. . . .	C. Steuart Betton.
21 $\frac{1}{8}$	7 $\frac{1}{4}$	7 $\frac{3}{4}$	Wadelai . . .	Major M. L. Carleton.
21	7	12 $\frac{1}{2}$	Uganda . . .	Sir H. D. Tichborne, Bart.
20 $\frac{3}{4}$	6 $\frac{3}{4}$	10 $\frac{1}{4}$	Nile Valley . . .	Julius Jeppe.
20 $\frac{1}{4}$	6 $\frac{3}{4}$	11	Do. . . .	Major W. Anstruther Thomson.
20 $\frac{1}{8}$	7	9 $\frac{3}{4}$	North end of Lake Albert	Col. Trevor Ternan.
20	6 $\frac{3}{4}$	11	Semaliki . . .	Sir W. Garstin.
19 $\frac{3}{4}$	6 $\frac{1}{2}$	12	Uganda . . .	Capt. C. J. Hawker.



Head and Fore-quarters of Lechi (*Cobus lichi*). From a photograph by Mr. Poulett-Weatherly.

LICHI or LECHWE (*Cobus lichi*).

In this handsome antelope the horns are longer than in its allies, considerably exceeding twice the length of the head, while the front of the fore-legs is black, and the hair long. Height at shoulder, 40 or 41 inches.

Like the puku, this kob was discovered by Livingstone and his companions Oswell and Murray during their journey to Lake Ngami in 1849. In point of size it approximates to the true waterbucks, from which, however, in addition to the features already mentioned, it may always be distinguished by its lighter and more graceful build. The general colour is fulvous, of a lighter tint than in the Uganda kob.

Seldom found very far from water, this antelope is most abundant

in the lagoons and swamps created by the annual rising of the Upper Zambesi, the Botletli, Chobi, Tamulakan, and other rivers of the interior, in localities where the surrounding flats are inundated for some part of the year. The lichi seldom ventures into the deep rivers from fear of the crocodiles, but among the reed-beds, the shallow lagoons, and flooded flats it is a familiar figure. It is often to be found, in the less accessible regions, in vast herds. An excellent swimmer, it can progress by a succession of splashing bounds at great speed through the lagoons and shallows. It is extremely tenacious of life.

Distribution.—Zambesia and Barotsiland.

Lechwi in the Barotsi and Lake *Leché*, Lee-gwee of the Makololo.
 Ngami countries. *Inya* of the Masubias.
Mumembé (male), *Ngia* (female) in *Oonya* of the Makubas.
 the Chilala and Chibisa countries. *Bainanja* of the Mushu Kulumbwe.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-34½	...	..	?	F. H. Barber.
-34	...	...	?	J. Rosen.
-33½	7	26¾	Lake Bangweolo	Poulett-Weatherley.
31½	7	18	N.W. Rhodesia	Col. C. Harding.
30¼	8	17	Kafue River	C. Fendelow.
30⅝	8½	19¼	?	Sir Edmund G. Loder, Bart.
30	8¼	20½	British Central Africa	J. H. Hayes.
28½	8¼	16	Barotsiland	Capt. J. Carden.
28	8¾	16½	N.W. Rhodesia	George Grey.
-28	...	...	?	W. V. Corder.
28	8¾	16½	?	George Grey.
27¾	7½	18¾	Barotsiland	South-African Museum.
27¾	8	14	Okavango Valley	Sir H. J. Goold-Adams.
27¾	...	13½	?	P. C. Keytel.
27½	10¾	19½	Chobi Valley	British Museum (F. C. Selous).
27½	7½	20½	Barotsiland	Dudley West.
27¼	8	14¾	Chobi Valley	F. C. Selous.
27	8¼	14½	Barotsiland	F. V. Worthington.
-26½	9	20¼	?	Julius Jeppe.
-26½	7½	14¾	Barotsiland	Major W. Anstruther Thomson.

SMITHEMAN'S LICHI (Cobus smithemani).

23¼	5¾	11¾	Near Lake Mweru	Hon. Walter Rothschild.
21¾	6¼	18¾	Do.	Do.



Skull and Horns of Puku.

PUKU KOB (*Cobus vardoni*).

Impuku of the Masubias.

Muntinya in Barotsiland.

Puku in Ngamiland.

Seula in the Chilala and Chibisa countries.

From the other small kobs with the back of the ears rufous, the puku is distinguishable at once by the uniformly foxy colour of the fore-legs, as well as by the greater length of the hair, especially in the region of the back and loins, where it has a tendency to curl. General colour reddish yellow. Height at shoulder about 39 or 40 inches. Weight about 190 lbs.

Distribution.—Chobi and Zambesi valleys and Rhodesia. Everywhere rare, and found only in small herds.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{4}$	8 $\frac{1}{2}$	12 $\frac{1}{4}$	Luswesi Valley, Lake Bangweolo	F. Smitheman.
-19 $\frac{1}{2}$	...	12 $\frac{3}{4}$	...	J. Rosen.
19 $\frac{1}{8}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	?	J. Carr Saunders.
19 $\frac{1}{4}$	7 $\frac{1}{2}$	9 $\frac{1}{4}$	?	T. G. Davey.
19	7 $\frac{3}{4}$	5 $\frac{3}{4}$	Barotsiland . . .	Capt. J. Carden.
18 $\frac{3}{4}$	6 $\frac{3}{8}$	8 $\frac{1}{2}$	Do. . . .	R. T. Coryndon.
18 $\frac{3}{4}$	7	6 $\frac{1}{2}$	?	J. L. Drège.
-18 $\frac{1}{8}$	...	...	Njoko Valley . . .	Major A. St. H. Gibbons.
18	7	11 $\frac{1}{4}$	N.W. Rhodesia . . .	Col. C. Harding.
18	7 $\frac{3}{8}$	6	?	George Grey.
17 $\frac{3}{4}$	7 $\frac{1}{4}$	8	Ulanga River . . .	R. Berridge.
-17 $\frac{1}{2}$	...	10 $\frac{1}{2}$	Zambesi	Capt. W. Jardine.
-17 $\frac{1}{2}$	...	11 $\frac{3}{4}$	Batoka Plateau . . .	E. Folley.
17 $\frac{3}{8}$	7	6 $\frac{1}{2}$	British Central Africa .	Hon. Walter Rothschild.
17 $\frac{3}{8}$	6 $\frac{1}{4}$	18 (malformed)	Kabampo Valley . . .	Sir H. J. Goold-Adams.
17 $\frac{1}{4}$	6 $\frac{1}{4}$	11 $\frac{1}{2}$	Barotsiland . . .	F. V. Worthington.
17	7	4 $\frac{1}{2}$	Ulanga River . . .	A. Mathews.
17	7	10	Barotsiland . . .	Dudley West.
17	6 $\frac{3}{4}$	8	Do. . . .	Rowland Ward.
17	6	8 $\frac{1}{4}$	Lake Mweru . . .	James Yule.
-17	6 $\frac{7}{8}$	9 $\frac{1}{2}$	Chobi River . . .	Imperial Museum, Vienna.

Cobus vardonii loderi.

21	8	8 $\frac{1}{4}$?	Sir Edmund G. Loder, Bart.
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Head of Male Vaal Rhebok.

GRAY or VAAL RHEBOK (*Pelea capreolus*).*Iliza* of the Swazis.*Pshiatla* of the Basutos.*Peeli* of the Bechuanas.

The short, upright, straight, and slender horns, together with the somewhat woolly nature of the hair, serve to differentiate the Vaal rhebok from the antelopes of the kindred genera. The tail, like that of the reedbucks, is moderately long and bushy; the ears are tall and narrow; the build is slight and graceful; and the general colour is uniformly pale gray, tending somewhat to fawn on the head and limbs. Height at shoulder about 29 or 30 inches. The chief essential distinctions between this antelope and the reedbucks are the form of the horns and the absence of the bare patches below the eyes.

Distribution.—The open hilly districts of Africa south of the Zambesi.

In the mountain ranges of the eastern and northern districts of Cape Colony, and thence onwards to the Zambesi, the Vaal rhebok affords good and exciting sport; and although its somewhat stiff

and stilty appearance is not at first suggestive of unusual activity, yet the pace and regularity with which a party of these antelopes will race up the steep flank of a mountain is wonderful. The most peculiar feature of the vaal rhebok is the soft and woolly nature of the gray coat; the horns afford but insignificant trophies, and the flesh is of poor quality for the table.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-11 $\frac{1}{2}$	...	...	Spitzkop . .	F. H. Barber.
-11 $\frac{1}{2}$	...	...	Cape Colony .	South-African Museum.
11 $\frac{1}{16}$	2 $\frac{1}{8}$	6 $\frac{3}{4}$	?	Surgeon H. E. Fryer, R. N.
-11	...	...	?	M. E. Bowker.
10 $\frac{3}{4}$	2	2 $\frac{1}{2}$	Basutoland . .	Julius Jeppe.
-10 $\frac{5}{8}$	...	6	Cape Colony .	E. T. Murray.
-10 $\frac{1}{2}$	2 $\frac{1}{8}$	4 $\frac{5}{8}$	Transvaal . .	H. T. and A. H. Glynn.
-10 $\frac{1}{4}$	...	3 $\frac{3}{4}$	?	P. C. Keytel.
10 $\frac{1}{16}$	2	3 $\frac{7}{8}$	Near Middleburg.	E. H. E. Abadie.
-9 $\frac{1}{2}$	...	3 $\frac{1}{4}$	?	Major W. Anstruther Thomson.
-9 $\frac{3}{8}$	2	4 $\frac{1}{4}$	Basutoland . .	Lord Milner.
9 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	?	Dr. Oakeshott.
-9 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Near Cape Town.	Capt. W. Jardine.
9	2 $\frac{5}{8}$	2 $\frac{5}{8}$	?	Mr. Justice Hopley.
-8 $\frac{3}{4}$	2 $\frac{5}{8}$	3 $\frac{5}{8}$	?	A. Ohlsson.
8 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	Cape Colony .	R. H. Venables-Kyrke.
8 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{5}{8}$	South Africa .	British Museum (Dr. Burchell).
8 $\frac{1}{2}$	2 $\frac{1}{2}$	2	?	G. Richards.
8 $\frac{3}{8}$	2	3 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
8 $\frac{1}{4}$	2	2 $\frac{7}{8}$	?	F. C. Selous.
-8 $\frac{1}{4}$	2 $\frac{1}{8}$	3 $\frac{3}{4}$	?	Dr. W. P. Y. Bainbrigge.
-8	2	3	Mauchberg . .	F. Vaughan Kirby.
7 $\frac{3}{4}$	2 $\frac{1}{2}$	3 $\frac{3}{4}$	?	Hon. Walter Rothschild.
7 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{7}{8}$	?	R. T. Coryndon.



Head of Male Common Reedbuck.

COMMON REEDBUCK (*Cervicapra arundinum*).

Bemba of the Masaras.
Inzeegee of the Amandebili.
Im-vwee of the Masubias.
Um-vwee of the Makubas.
Inhlango of the Swazis.
Iklabu of the Basutos.
Impoyo of the Lower Zambesi tribes.

Mziki of the Zulus and Matabili.
Natafwi in the Mashukulumbwi country.
Mutobo in Barotsiland.
Sibughat in Ngamiland.
Mpoyo in the Chilala and Chibisa countries.

The reedbucks, none of which are so large as the waterbucks, differ from the latter and the kobs by lighter build, and the presence

of a completely bare or very short-haired patch on each side of the head immediately beneath the ear. The tail, too, is more bushy and shorter, the lateral hoofs are relatively smaller, and the horns, which are of medium length and stoutness, curve regularly upwards, and in some cases also forwards. Till very late in life the basal portion of the horns is of a pasty consistence. The present species, the true reitbok of the Boers, is the largest of the genus, standing about 36 or 37 inches at the shoulder; and has the ear-patch completely bare, and the horns inclining markedly forwards. They are generally met with in small family parties, and when excited or alarmed utter a characteristic shrill whistle. As their flesh is of fair quality, and their shooting by no means difficult, they are much sought after by sportsmen.

Distribution.—South Africa, extending as far north as Angola on the west, and to Mozambique on the east coast. Although formerly numerous in the eastern districts of Cape Colony and Natal, reedbuck have now become scarce in South Africa, and it is not till Khama's country is reached that they are met with in any numbers. As their name implies, reedbuck frequent the reed-brakes fringing so many African rivers; and some of the rivers where they are still fairly abundant are the Lotsani in Bamangwato and those of Ngami-land and the country between Mashonaland and the east coast.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ -18	...	...	South Africa . . .	F. Vaughan Kirby.
-17½	6½	17½	Barotsiland . . .	Percy C. Reid.
-16½	...	...	British Central Africa . .	G. Le H. K. B. Ritchie.
-16¾	6¾	19½	Mpimbi, B.C.A. . .	Major F. Trollope.
16½	6	16¾	Matabililand . . .	R. C. Batley.
-16½	6½	10	?	Julius Jeppe.
-16	5½	11½	South Africa . . .	A. Ohlsson.
16	7½	9½	Barotsiland . . .	Col. C. Harding.
15¾	6½	10½	?	C. D. Rudd.
15¾	6½	14½	?	British Museum.
-15¾	6¾	10¾	Zululand . . .	F. R. N. Findlay.

¹ This was seen and measured by Mr. Kirby. It had one horn only; the other was shot off.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ 15 $\frac{3}{4}$	6 $\frac{1}{8}$	13 $\frac{1}{2}$	Transvaal	Julius Jeppe.
15 $\frac{3}{4}$	6	19	Tanganyika	Hon. Walter Rothschild.
-15 $\frac{1}{2}$	...	...	Nyoko Valley, B.C.A. .	Major A. St. H. Gibbons.
-15 $\frac{1}{2}$	6 $\frac{5}{8}$	15 $\frac{1}{2}$	Transvaal	F. Vaughan Kirby.
-15 $\frac{1}{2}$	4 $\frac{7}{8}$	12 $\frac{1}{4}$	?	Capt. W. Jardine.
-15 $\frac{1}{2}$	...	...	Damaraland	South-African Museum.
-15 $\frac{1}{2}$	...	12	Baloka Plateau	S. M. L. O'Keiffe.
-15 $\frac{3}{8}$	...	...	Transvaal	Abel Chapman.
15 $\frac{1}{4}$	6 $\frac{1}{4}$	13 $\frac{3}{8}$	Barotsiland	F. V. Worthington.
15 $\frac{1}{4}$	6	13 $\frac{3}{4}$	Rhodesia	George Grey.
-15 $\frac{1}{4}$	6	15	?	P. C. Keytel.
-15 $\frac{1}{4}$	...	...	?	F. H. Barber.
15 $\frac{1}{8}$	6 $\frac{1}{8}$	11 $\frac{1}{4}$	Manica Plateau, N. of Zambesi	F. C. Selous.
15	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Mashonaland	Sir John Willoughby, Bart.
-15	...	...	Do. . . .	F. Lean.
-15	...	...	?	H. T. and A. H. Glynn.
-15	...	...	?	O. R. Dunell.
14 $\frac{3}{4}$	6	14 $\frac{1}{4}$	B.C.A.	S. Robins.
14 $\frac{3}{4}$	6	15 $\frac{1}{8}$	Zomba, B.C.A. . . .	C. C. Bowring.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	British Central Africa .	Capt. J. S. Brogden.
14 $\frac{5}{8}$	7 $\frac{3}{8}$	9 $\frac{1}{8}$	?	Hon. Walter Rothschild.
14 $\frac{1}{2}$	6 $\frac{3}{8}$	7 $\frac{3}{8}$	?	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	5 $\frac{1}{4}$	14 $\frac{1}{2}$	Mashonaland	Capt. H. B. Dalgety.
14 $\frac{1}{2}$	6 $\frac{1}{4}$	12 $\frac{3}{8}$	Do. . . .	A. Eyre.
-14 $\frac{1}{4}$	6	10	Angola	C. H. Pemberton.
-13	...	...	Do. . . .	E. P. Cooper.

¹ Abnormal head.



Head of Mountain Reedbuck.

MOUNTAIN REEDBUCK or ROOI RHEBOK (*Cervicapra fulvorufula*).

Inhlang-amatshe of the Swazis and Zulus.

This reedbuck, which measures about 28 inches at the shoulder, is distinguished by the absence of a distinct forward hook to the tips of the horns, and the general grayish fawn colour of the hair, which has, however, in some cases a more or less distinctly rufous tinge.

Distribution.—Eastern Africa to the south of the Zambesi, particularly Natal, Zululand, and Bechuanaland; represented farther north by the under-mentioned race. Rooi (red) rhebok differ from the typical representative of the genus in being inhabitants of the basal slopes of mountains, at a lower level than the tract frequented by the vaal rhebok. They are generally found in small troops of a dozen head or less; and from their active habits and the difficult nature of the ground they frequent, afford excellent stalking. In the neighbourhood of the tributaries of the Limpopo, on the Mabubi,

Tamulikan, Machabi, Sunta, and Chobi rivers, as well as the tributaries of the Zambesi east of the Victoria Falls, and throughout Mashonaland and Matabililand, rooi rhebok are still abundant. Those from the Manica plateau, north of the Zambesi may be the East African race.

The reedbuck discovered by Mr. Vaughan Kirby in the Lydenburg range of the Transvaal departs from the ordinary type of the mountain reedbuck in exhibiting a tendency to partial albinism. Whether this peculiarity entitles it to be regarded as a distinct race (*Cervicapra fulvorufula subalpina*) must, for the present, remain a moot point.

A reedbuck from East Africa, described by Mr. Walter Rothschild from a single skin as a distinct species, appears to be, at most, nothing more than a local race of the rooi rhebok (*Cervicapra fulvorufula chanleri*). In the type specimen the nose shows a dark streak like the one often seen in the rooi rhebok and common reedbuck.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-8 $\frac{7}{8}$	4 $\frac{7}{8}$	4 $\frac{3}{4}$	Humansdorp . . .	F. Vaughan Kirby.
-8 $\frac{5}{8}$	5 $\frac{1}{8}$	5	?	P. C. Keytel.
-8 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{4}$	Transvaal . . .	F. R. N. Findlay.
7 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{4}$	?	Hon. Walter Rothschild. (Shot by F. C. Selous.)
-7 $\frac{3}{4}$	...	2 $\frac{1}{2}$	Transvaal . . .	J. L. Drège.
-7 $\frac{1}{2}$	4	3 $\frac{1}{2}$	Lebombo Range, S.A.	Count E. Hoyos.
-7 $\frac{1}{2}$	...	...	?	H. T. and A. H. Glynn.
7 $\frac{3}{8}$	4 $\frac{1}{4}$	3	Zululand . . .	A. H. Neumann.
-7 $\frac{1}{4}$	...	...	?	O. R. Dunell.
-7 $\frac{1}{4}$	4 $\frac{1}{8}$	2 $\frac{1}{2}$	?	Mr. Justice Hopley.
-7 $\frac{1}{8}$	4 $\frac{1}{4}$	5 $\frac{3}{4}$	?	Julius Jeppe.
7	3 $\frac{1}{2}$	4 $\frac{1}{4}$	Zululand . . .	A. Cameron.
6 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{4}$	?	Bloemfontein Museum.
6 $\frac{3}{4}$	4 $\frac{1}{4}$	3 $\frac{7}{8}$	Near Ladysmith . .	Lieut.-Col. P. J. R. Crampton.
-6 $\frac{5}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{8}$	?	Mr. Justice Hopley.
6 $\frac{1}{2}$	4	3 $\frac{1}{4}$	Zululand . . .	Lieut.-Col. Hon. W. Coke.
6 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{1}{4}$	Orange River Colony .	Lieut.-Col. H. R. Kelham.
-6 $\frac{1}{2}$	4	3	?	Major W. Anstruther Thomson.

The following specimens belong to the East African form :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$6\frac{1}{8}$	$3\frac{1}{2}$	3	E. of Lake Margerhita	Lord Hindlip.
-6	$3\frac{5}{8}$	$2\frac{3}{4}$	Rift Valley	C. Steuart Betton.
-6	$4\frac{3}{4}$	$5\frac{7}{8}$	?	Capt. M. M'Neill.
$5\frac{5}{8}$	$4\frac{3}{8}$	4	N.E. of Lake Chomo	British Museum (Lord Hindlip).
$5\frac{5}{8}$	4	4	?	Lord Delamere.
$5\frac{5}{8}$	$3\frac{1}{2}$	$4\frac{3}{8}$	?	Major A. E. Smith.
$5\frac{1}{2}$	4	$3\frac{5}{8}$	Mau Escarpment	Rhys Williams.
$5\frac{1}{2}$	...	$3\frac{1}{2}$	East Africa	Major E. G. Harrison.
$5\frac{1}{2}$	4	$2\frac{3}{4}$	Do.	A. Bayley Worthington.
$5\frac{3}{8}$	$15\frac{1}{2}$	$2\frac{1}{4}$	?	F. J. Jackson.
$5\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{1}{2}$	?	J. H. Penruddock.
$5\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{7}{8}$	Zombènè Range	W. Astor Chanler.
$5\frac{1}{4}$	4	$4\frac{1}{2}$	East Africa	G. Chetwynd.
$4\frac{7}{8}$	$3\frac{3}{8}$	3	Baringo	Hon. Walter Rothschild.
$4\frac{1}{2}$	$3\frac{1}{2}$	$2\frac{1}{2}$	Do.	R. Wahrmann.
$4\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{1}{4}$	Do.	Lieut.-Col. W. A. W. Lawson.



Ward's Bohor Reedbuck.

BOHOR REEDBUCK (*Cervicapra redunca*).

Distinguished from the mountain reedbuck (with which it agrees approximately in size) by the distinct forward curvature of the tips of the horns, so as to form a hook. General colour uniformly bright fawn, usually somewhat darker markings on the face and part of forelimbs; tail only slightly bushy, fawn-coloured above and white beneath. The height of the East African race is about 28 inches.

Distribution.—West, East, and North-east Africa.



Front View of Horns of Abyssinian Bohor Reedbuck.

The following five races are recognised :—

Cervicapra redunca typica.—West Africa, north of forest region. Horns short and stout, very thick at base, curved in front, points turned inwards.

Cervicapra redunca cottoni.—Kordofan, White Nile, and Isle of Meroe. Horns long and thin, much curved outwards and backwards, with the points curled straight over or directly outwards.

Cervicapra redunca bohor.—Central Abyssinia. Horns longer, stouter, and not so curved as in *cottoni*.

Cervicapra redunca donaldsoni.—East of Lado and Western Somaliland. Horns long, slender, curved outwards, and points much turned inwards.

Cervicapra redunca wardi.—Uganda and East Coast of Africa. Horns short, stout, curved outwards, and the points much turned inwards.

A. The following specimens belong to the typical race :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11	5	7	N. Nigeria . . .	L. Donisthorpe.
10 $\frac{3}{8}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$	Do.	Capt. H. A. Porter.

Length on front curve	Circumference.	Tip to Tip.	Locality.	Owner
10 $\frac{3}{8}$	6 $\frac{1}{2}$	2 $\frac{7}{8}$	Lake Chad . . .	S. B. B. Dyer.
10	5 $\frac{3}{4}$	5 $\frac{3}{4}$	N. Nigeria . . .	J. C. Parker.
9 $\frac{3}{4}$	5 $\frac{3}{4}$	5	Do.	A. A. Smith.
9 $\frac{1}{2}$	5	3 $\frac{1}{8}$	Ganda, Nigeria . .	Major J. W. Carroll.
9 $\frac{1}{8}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$	Do.	Major W. Anstruther Thomson.
8 $\frac{3}{4}$	6	4	Nigeria	Capt. G. W. Denison.
8 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{5}{8}$	Gambia	Lieut. A. A. Ellison, R.N.
8	5 $\frac{1}{4}$	3 $\frac{1}{2}$	Ibi, Benue River, West Africa	Julius Jeppe.
8	6	7 $\frac{3}{4}$	West Africa . . .	Hon. Walter Rothschild.
8	5	5 $\frac{3}{8}$	Gambia	Guy H. Sangster.

B. *The following belong to Cervicapra redunca bohor* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{1}{2}$	5 $\frac{1}{4}$	8	Abyssinian Sudan .	Count J. Potocki.
10 $\frac{3}{4}$	5 $\frac{3}{4}$	11 $\frac{3}{4}$	West of Lake Tana .	P. H. G. Powell Cotton.
9 $\frac{3}{4}$	5 $\frac{3}{4}$	5	Lake Zuay	Lord Hindlip.
9 $\frac{1}{4}$	6	8	Zuguala Mt. . . .	A. E. Butter.

C. *The undermentioned specimens are referable to Cervicapra redunca cottoni* :—

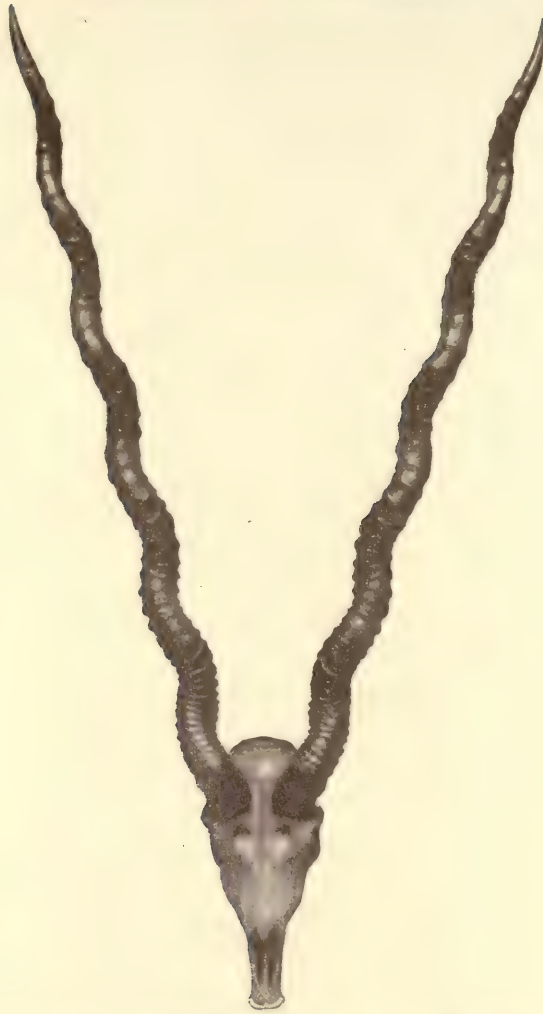
Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{8}$	5 $\frac{1}{2}$	13	Sudan	Prince Colloredo Mannsfeld.
12 $\frac{3}{4}$	5 $\frac{1}{4}$	8 $\frac{1}{4}$	Near Kassala . . .	Carl Hagenbeck.
12	5 $\frac{3}{4}$	7 $\frac{1}{4}$	White Nile	Capt. the Hon. M. P. Macnagton.
11 $\frac{3}{4}$	5 $\frac{1}{4}$	11 $\frac{1}{8}$	Do.	H. Cookson.
11 $\frac{3}{4}$	5	9 $\frac{7}{8}$	Near Kassala . . .	Hon. Walter Rothschild.
11 $\frac{1}{2}$	5	8 $\frac{1}{4}$	White Nile	R. M'D. Hawker.
11 $\frac{1}{4}$	5 $\frac{1}{4}$	14 $\frac{3}{4}$	Do.	Capt. H. N. Dunn.
11	5 $\frac{1}{4}$	10 $\frac{3}{8}$	Do.	Major R. M. Sanders.
-11	4 $\frac{3}{4}$	13 $\frac{3}{4}$	Sudan	Prince Henry of Liechtenstein.

D. *The following specimens are referable to various races of the species :—*

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	5 $\frac{1}{8}$	8 $\frac{1}{8}$	East Africa . . .	British Museum.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Col. J. R. Macdonald.
12 $\frac{1}{2}$	5 $\frac{5}{8}$	5 $\frac{3}{8}$	Do.	British Museum (Sir John Kirk).
10 $\frac{5}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Sir Robert Harvey, Bart.
10 $\frac{1}{2}$	...	...	Do.	Capt. C. A. Sykes.
10 $\frac{1}{8}$	4 $\frac{3}{4}$	7	Do.	Dr. A. Paget.
10	5 $\frac{1}{2}$	6 $\frac{1}{4}$	Mau Downs . . .	F. J. Jackson.
10	7 $\frac{1}{4}$	4 $\frac{3}{4}$	East Africa . . .	C. Craig.
9 $\frac{7}{8}$	4 $\frac{7}{8}$	3 $\frac{3}{4}$	Galla country . .	Viscount Edmond de Poncins.
9 $\frac{3}{4}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	East Africa . . .	E. J. L. Berkeley.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	Do.	Major M. L. Carleton.
9 $\frac{1}{2}$	...	4 $\frac{3}{4}$	Do.	Major E. G. Harrison.
9 $\frac{3}{8}$	5	5 $\frac{1}{2}$	Do.	Capt. J. Ponsonby.



Side View of Horns of Abyssinian Bohor Reedbuck. Shot by P. H. G. Powell-Cotton.



Skull and Horns of Blackbuck. From Mr. A. O. Hume's specimen.

BLACKBUCK or INDIAN ANTELOPE (*Antilope cervicapra*).

Although in former days nearly all the then known species of antelope were included in the genus *Antilope*, the extent of the latter has been gradually whittled down until it now comprises the Indian blackbuck alone. In addition to being the sole representative of the genus, this species is also the type of a sub-family or group of antelopes, embracing among others the saiga, the gazelles, the pala,

and springbuck. All these are small or medium-sized antelopes, with hairy muzzles, generally short tails, and tall, narrow-crowned cheek-teeth, like those of sheep. With the exception of the springbuck and the majority of the gazelles, horns are confined to the males. From all the other members of this assemblage the blackbuck is distinguished by the beautiful spiral formed by its horns. It has large face-glands, a short and compressed tail, and well-developed lateral hoofs. Height at shoulder about 32 inches; average weight, 85 lbs. It is only in adult males that the characteristic dark tint from which the species takes its name is developed, young males being uniformly brownish fawn above like the does.

Distribution.—India, from the foot of the Himalaya to Cape Comorin, and from the Punjab to Lower Assam; unknown in Ceylon and the countries to the eastward of the Bay of Bengal.

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
-30½	...	...	?	Capt. J. MacRae-Gilstrap.
¹ -28¾	...	...	Jeypore . . .	Lieut.-Gen. Sir B. Blood, K.C.B.
28¼	5	17¾	Near Delhi . . .	A. O. Hume. (See illustration.)
-28	...	20	Do. . . .	Lieut.-Col. P. Dunell Pank.
-28	5	15	Near Ahmedabad . .	T. Le Mesurier.
-27⅞	...	...	Jeypore	Lieut.-Gen. Sir B. Blood, K.C.B.
-27	5	19½	Bikanir	Capt. Harry V. Brooke.
26⅞	4¾	26	Ulwar	Major L. Impey.
26¾	4¾	25¼	Bhurt pore, N.W.P.	Major-Gen. Sir E. T. H. Hutton.
-26¾	4¾	...	Bikanir	Major-Gen. A. A. A. Kinloch.
26½	5¼	27¾	N.W.P.	Capt. C. B. Oldfield.
26⅞	5	17⅞	Sirsa, Punjab . . .	A. O. Hume.
-26⅞	5¼	22	Bikanir	Lieut.-Col. G. D. F. Sullivan.
26¼	5	23½	Oudh	E. St. J. Lawson.
26	5	21⅞	Bikanir	Capt. H. W. Codrington.
-25⅞	4½	16	?	F. L. Crawford.
25¾	4¾	19	Jeypore	Hon. A. Holland-Hibbert.
25½	4⅞	18	Punjab	Lieut.-Col. R. H. Rattray.

¹ Measured and recorded by Mr. A. O. Hume, but not now in the possession of General Sir B. Blood, K.C.B.

RECORDS OF BIG GAME

Length straight.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25 $\frac{3}{8}$	5 $\frac{1}{2}$	14 $\frac{1}{2}$	Sirsa, Punjab . . .	British Museum (Hume Collection).
-25 $\frac{3}{8}$	5	19	?	Count E. Hoyos.
25 $\frac{1}{4}$	4 $\frac{3}{4}$	19	Jeypore . . .	A. B. Graves.
25 $\frac{1}{8}$	5 $\frac{1}{8}$	15	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
25 $\frac{1}{8}$	4 $\frac{7}{8}$	22 $\frac{1}{4}$	Bikanir . . .	H.H. the Maharajah of Bikanir.
-25	5 $\frac{1}{4}$	13 $\frac{1}{2}$	?	Bombay Natural History Society.
-25	...	...	?	Lucknow Museum.
24 $\frac{3}{4}$	5	20	Jeypore . . .	Major J. B. Buchanan.
24 $\frac{3}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	Dholpur . . .	A. J. Coppinger.
-24 $\frac{3}{4}$	...	...	Sangar . . .	Lieut.-Col. H. G. Mainwaring.
-24 $\frac{1}{2}$	5	18 $\frac{3}{4}$	C. India . . .	Lieut.-Col. R. W. Mapleton.
24 $\frac{1}{2}$	5 $\frac{3}{8}$	20 $\frac{1}{4}$	Bikanir . . .	H.H. the Maharaja of Bikanir.
24 $\frac{3}{8}$	4 $\frac{7}{8}$	18 $\frac{1}{4}$	Do. . .	Lieut.-Col. G. D. F. Sulivan.
24 $\frac{1}{4}$	4 $\frac{3}{4}$	19 $\frac{1}{2}$	?	A. Leslie Renton.
24 $\frac{1}{4}$	5	18 $\frac{1}{2}$	?	Marquis of Ailsa.



Head of Blackbuck.

Length
straight.

Circum-
ference.

Tip to Tip.

Locality.

Owner.



Skull and Horns of Male Pala, from a specimen shot by Mr. A. H. Neumann.

PALA or IMPALA (*Æpyceros melampus*).

Inzero of the Masubias.
Swalah of the Swahilis.

Luondo and *Mpala* in Barotsiland,
Ngamiland, Chilala, and Chibisa.

The graceful pala differs from all the members of the gazelle group by the absence of the lateral hoofs; its specific name (black-footed) being taken from the pair of tufts of black hair on each hind-foot. The horns of the bucks, which are of considerable length in proportion to the size of the animal, show a characteristic and graceful double curvature; and the bright foxy red hue of the shining hair of the upper-parts is very characteristic. Height at shoulder about 33 inches. The Boer name of rooibok (red buck) is happily chosen. Weight about 110 lbs.

Distribution.—Southern and South-Eastern Africa, extending as far north as Lower Kordofan. In Angola replaced by a form (*Æ. petersi*), usually regarded as a distinct species, but which is perhaps only a local race (*Æ. melampus petersi*), distinguished by the presence of a purplish black streak down the middle of the face and another

through each eye. In the days of their abundance pala were found in big troops, such as are still to be met with on the Upper Zambesi, in East Mashonaland, and parts of British East and Central Africa. Half a century ago, or even less, they were to be found in similar numbers among the covert on the banks of every river in the Transvaal and Bechuanaland; but now it is not till the northern border of the former country that they are to be met with, and then only in small parties. Pala are some of the fleetest of all antelopes, and are in the habit of leaping high in the air; their presence always implies the neighbourhood of water.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
30	24	6 $\frac{1}{4}$	17 $\frac{1}{2}$	East Africa . .	Lord Delamere.
29 $\frac{1}{2}$	25	6	24	Do. . .	H. Hyde-Baker.
29 $\frac{1}{4}$	24 $\frac{1}{2}$	6	19 $\frac{1}{2}$	Do. . .	Count E. Hoyos.
29	22 $\frac{1}{2}$	6	9 $\frac{3}{8}$	Do. . .	Dr. A. Paget.
28 $\frac{3}{4}$	23 $\frac{1}{2}$	6 $\frac{1}{4}$	19	Do. . .	Sir Edmund G. Loder, Bart.
-28 $\frac{3}{8}$	24	6	16 $\frac{5}{16}$	Do. . .	C. Steuart Betton.
-28 $\frac{1}{8}$	...	6 $\frac{1}{2}$	10 $\frac{1}{8}$	Do. . .	Capt. M. McNeill.
28	23	5 $\frac{3}{4}$	22 $\frac{3}{4}$	Do. . .	A. H. Neumann. (See illustra- tion.)
28	22 $\frac{1}{2}$	6	12	Do. . .	F. J. Jackson.
28	21	5 $\frac{7}{8}$	12 $\frac{1}{4}$	Do. . .	G. E. Smith.
28	...	6	20	Do. . .	Major W. Anstruther Thomson.
27 $\frac{3}{4}$	21	6	9 $\frac{1}{2}$	Do. . .	Lieut.-Col. W. A. W. Lawson.
27 $\frac{3}{4}$	23 $\frac{1}{4}$	6	13 $\frac{1}{2}$	Do. . .	Capt. H. F. T. Fisher.
27 $\frac{1}{2}$	23 $\frac{1}{4}$	5 $\frac{3}{4}$	12 $\frac{3}{4}$	Do. . .	Rhys Williams.
27 $\frac{1}{2}$	22 $\frac{1}{4}$	6	11 $\frac{3}{4}$	Do. . .	F. C. Selous.
27 $\frac{1}{2}$	21	5 $\frac{7}{8}$	14 $\frac{1}{4}$	South Africa . .	British Museum (Dr. Burchell).
27 $\frac{1}{2}$	23 $\frac{1}{4}$	5 $\frac{7}{8}$	15 $\frac{1}{2}$	East Africa . .	Julius Jeppe.
27 $\frac{1}{2}$	22 $\frac{7}{8}$	6 $\frac{1}{4}$	10 $\frac{1}{2}$	Do. . .	Capt. C. U. Price.
27 $\frac{1}{2}$	23 $\frac{1}{8}$	6	18 $\frac{3}{4}$	Do. . .	A. Bayley-Worthington.
27	22 $\frac{1}{4}$	6	16	Do. . .	Hon. Walter Rothschild.
27	22 $\frac{1}{4}$	6	10 $\frac{3}{4}$	Do. . .	Major A. E. Smith.
27	21 $\frac{1}{2}$	6	16 $\frac{3}{4}$	Do. . .	F. H. Barber.

RECORDS OF BIG GAME

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
26 $\frac{3}{4}$	22 $\frac{1}{2}$	6	13 $\frac{1}{2}$	East Africa . .	P. B. Vander-Byl.
26 $\frac{3}{4}$	22	5 $\frac{3}{4}$	12 $\frac{1}{2}$	Do. . .	R. Meinertzhagen.
-26 $\frac{1}{2}$	...	...	...	Do. . .	Capt. C. A. Sykes.
-26 $\frac{1}{2}$	20 $\frac{3}{4}$	...	...	South Africa . .	Grahamstown Museum.
26 $\frac{3}{8}$	21 $\frac{1}{2}$	6	12	East Africa . .	Capt. N. E. Playfair.
26 $\frac{1}{4}$	23	6 $\frac{1}{4}$	18 $\frac{3}{4}$	Do. . .	T. P. A. Holford.
26 $\frac{1}{4}$	19 $\frac{3}{4}$	5 $\frac{3}{4}$	22 $\frac{1}{4}$	Do. . .	C. W. Hobley.
26	21	6 $\frac{1}{4}$	13	Do. . .	Major E. J. Tickell.
26	20 $\frac{5}{8}$	6	16 $\frac{1}{2}$	Do. . .	Norman B. Smith.
26	21 $\frac{1}{4}$	6	19 $\frac{1}{2}$	Do. . .	G. Chetwynd.
26	21 $\frac{5}{8}$	5 $\frac{3}{4}$	17	Do. . .	R. Wahrmann.
25 $\frac{3}{4}$	20 $\frac{1}{2}$	6	7 $\frac{3}{4}$	Do. . .	Douglas M'Douall.
25 $\frac{1}{2}$	21 $\frac{1}{4}$	6 $\frac{1}{4}$	12 $\frac{7}{8}$	Do. . .	G. E. Smith.
-25 $\frac{1}{2}$	20	6	14	Matamiri Bush .	F. Vaughan Kirby.
25 $\frac{1}{2}$	20	6	13 $\frac{3}{4}$	East Africa . .	Henry Charrington.
-25.13	20	5.12	15.7	Do. . .	Prince Henry of Liechtenstein.
25	20 $\frac{1}{4}$	5 $\frac{7}{8}$	14	Do. . .	E. Wynstone Waters.
24 $\frac{7}{8}$	19 $\frac{3}{4}$	5 $\frac{7}{8}$	11 $\frac{5}{8}$	Do. . .	Sir Edmund G. Loder, Bart.
24 $\frac{3}{4}$	19 $\frac{1}{2}$	5 $\frac{3}{4}$	14 $\frac{3}{4}$	Do. . .	C. G. Schillings.
24 $\frac{3}{4}$	21	6	17 $\frac{1}{2}$	Do. . .	R. J. Church.
24 $\frac{3}{4}$	20	6	11 $\frac{1}{2}$	Do. . .	Capt. C. P. Foley.
24 $\frac{1}{2}$	19 $\frac{1}{2}$	6 $\frac{1}{4}$	11	Do. . .	Sir H. D. Tichborne, Bart.
24 $\frac{1}{2}$	19 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . .	A. Mathews.
24 $\frac{1}{2}$	20 $\frac{1}{2}$	6	11 $\frac{3}{4}$	Do. . .	Capt. R. E. Wemyss.
24 $\frac{1}{2}$	19 $\frac{1}{8}$	5 $\frac{5}{8}$	12 $\frac{3}{8}$	South Africa . .	British Museum.
24	20	5 $\frac{1}{2}$	12	Chobe Valley . .	F. C. Selous.

The following specimens belong to the Angolan race :—

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
23 $\frac{3}{4}$	19 $\frac{3}{4}$	6	14 $\frac{3}{8}$	Angola . . .	C. W. Sharp.
23 $\frac{1}{4}$	...	5 $\frac{1}{2}$	15	Do. . . .	A. H. Harrison.
23 $\frac{1}{4}$	18 $\frac{3}{4}$	6	12 $\frac{1}{4}$	Kaokoland . .	Capt. F. Cookson.
21 $\frac{1}{4}$	18	5 $\frac{1}{2}$	19 $\frac{1}{4}$	S.W. Africa . .	A. N. Henderson.
21 $\frac{1}{4}$	18	6 $\frac{1}{2}$	11	Angola . . .	E. P. Cooper.
21	17 $\frac{7}{8}$	5 $\frac{7}{8}$	11 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.
21	17 $\frac{7}{8}$	6	9 $\frac{3}{4}$	?	Rowland Ward.



Head of Pala.

Q



Horns of Male Saiga, from the Hon. Walter Rothschild's specimen.

SAIGA (*Saiga tatarica*).

One of the most remarkable of all antelopes is the Central Asian saiga, which differs from most of its kindred by the inflated and puffy nose. This forms a kind of trunk, comparable to that of the dik-diks, with the nostrils directed downwards. The tail is short, and lateral hoofs are present. In summer the colour is dull yellowish above and whitish beneath, but in winter the whole coat is uniformly whitish. The short and blunt ears are thickly covered with hair, and the horns of the males pale amber-colour. Height at shoulder about 30 inches.

Distribution.—The steppes of Southern Russia and South-Eastern Siberia. Formerly the range extended to the confines of Poland, but the species is now restricted to the Kalmuk Steppes between the rivers Don and Volga.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{4}$	5 $\frac{1}{4}$	3 $\frac{1}{2}$	Siberia	Hon. Walter Rothschild. (See illustration.)
13 $\frac{3}{4}$	5	...	Volga Steppe.	Sir Edmund G. Loder, Bart.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
13 $\frac{5}{8}$	5	5 $\frac{1}{2}$	Sarepta, South Russia . . .	British Museum.
12 $\frac{3}{4}$	5	2	?	Imperial Museum, Vienna.
12 $\frac{1}{2}$	5	4 $\frac{1}{4}$	Siberia	Dublin Museum.
12 $\frac{1}{4}$	5	5 $\frac{7}{8}$	Do.	Duke of Bedford.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{4}$	5	4 $\frac{1}{2}$	Siberia	Rowland Ward:
8 $\frac{1}{2}$	...	5 $\frac{1}{4}$	Do.	Major W. Anstruther Thomson.



Head of Male Saiga.



Head of Chiru.

CHIRU or TIBETAN ANTELOPE (*Pantholops hodgsoni*).

Among several animals peculiar to the Tibetan plateau none is more interesting than the chiru, whose beautiful horns form some of the most cherished trophies of the sportsman. Although very unlike in general appearance, the chiru is a near ally of the saiga, having the nose even more swollen at the sides, at least in the male, but less bent downwards at the tip. The long black horns of the bucks, which are somewhat compressed, rise almost vertically from the head, and are slightly divergent, nearly straight below, but evenly curving forwards above, and ridged in front. General colour of hair, which is very dense and short, pale fawn above, with a pinkish suffusion, but the face and

part of the limbs of the males black or dark brown. Height at shoulder about 31 or 32 inches; weight from 90 to 120 lbs.

Distribution.—The plateau of Tibet, at elevations of from 13,000 to 16,000 feet, or even more; the animal associates in pairs or small parties.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27 $\frac{3}{4}$	6 $\frac{1}{8}$	13 $\frac{1}{2}$	North of Beansi Pass .	A. O. Hume.
27 $\frac{5}{8}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$	Tibet	Sir Robert Harvey, Bart.
27 $\frac{1}{8}$	5 $\frac{7}{8}$	15 $\frac{3}{8}$	North of Beansi Pass .	A. O. Hume.
27	6	14 $\frac{1}{2}$	?	Hon. Walter Rothschild.
-27	...	12	?	J. D. Inverarity.
-26 $\frac{3}{4}$	6	13 $\frac{3}{4}$	Tibet	Dr. Albert von Stephani.
26 $\frac{3}{8}$	5 $\frac{5}{8}$	12 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
-26 $\frac{1}{2}$	...	...	Chang-chenmo . .	Lieut.-Col. A. E. Ward.
26 $\frac{3}{8}$	5 $\frac{7}{8}$	13 $\frac{5}{8}$	Ladak	Hon. Charles Ellis.
-26	5 $\frac{3}{4}$	11	Tibet	J. Ff. Darling.
26	4 $\frac{7}{8}$	12 $\frac{7}{8}$	Do.	Capt. G. Campbell.
25 $\frac{5}{8}$	5 $\frac{1}{2}$	12 $\frac{3}{4}$	?	Arnold Pike.
25 $\frac{1}{2}$	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Tibet	Major C. B. Vandeleur.
-25 $\frac{1}{2}$	5 $\frac{3}{4}$	13 $\frac{3}{4}$	?	W. H. Wilson.
25 $\frac{3}{8}$	5 $\frac{5}{8}$	12 $\frac{1}{2}$	North of Leh . .	British Museum (Hume Collection).
25	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Chang-chenmo . .	H. Z. Darrah. (See illustration.)
-25 $\frac{1}{4}$	5	10 $\frac{3}{4}$	Tibet	P. H. G. Powell Cotton.
24 $\frac{3}{4}$	5	11	?	E. L. Phelps.
24 $\frac{3}{4}$	5 $\frac{1}{2}$	15 $\frac{1}{2}$	Chinese Tibet . .	Capt. J. A. Stewart-Balmain.
24 $\frac{5}{8}$	5 $\frac{5}{8}$	11 $\frac{3}{4}$	Tibet	Sir Robert Harvey, Bart.
-24 $\frac{1}{2}$	4 $\frac{3}{4}$	...	Do.	Major-General A. A. A. Kinloch.
24 $\frac{1}{2}$	5	12 $\frac{3}{4}$	Do.	Capt. H. H. P. Deasy.
24 $\frac{1}{4}$	4 $\frac{3}{4}$	18 $\frac{1}{4}$	?	D. L. R. Lorimer.
-24 $\frac{1}{4}$	5 $\frac{1}{8}$	13 $\frac{3}{4}$	Tibet	B. H. Shaw Stewart.
-24	5 $\frac{1}{8}$	16 $\frac{1}{2}$	?	Capt. H. W. Codrington.
-24	...	...	Changchingris . .	Otho Shaw.
24	5 $\frac{1}{2}$	15	?	Capt. L. Oldfield.
-24	...	...	Chang-chenmo . .	Major H. Trevor.
-24	...	...	?	Indian Museum.
-24	...	...	?	H.H. the Maharaja of Travancore.



Horns of Male Springbuck, from Mr. F. H. Barber's specimen.

SPRINGBUCK (*Antidorcas euchores*).

Although nearly allied to the gazelles, both in bodily form, coloration, and the shape of the horns, the springbuck presents a peculiarity entitling it to be regarded as the representative of a genus by itself. This peculiarity is the presence of a fold, or narrow pouch, running down the middle of the hinder part of the back, and lined with long pure white hairs. In periods of excitement this pouch is capable of being turned partially inside-out, when the long white hairs are erected, and give a totally different appearance to this region of the animal. Owing to the dark nose-streak stopping short at the level of the eyes, the springbuck has more white on the face than is the case with the majority of gazelles; and the white on the rump, which includes the tail and joins that of the middle of the back, also occupies a larger area. Height at shoulder, 30 inches.

Distribution.—The plains of Southern Africa, extending in the central districts of the continent to about latitude 20° S., where its limits are defined by the forests to the south of the Mabebe River; in the west ranging as far north as Mossamedes and Benguela in Southern Angola, and in the east at least up to the Limpopo. Although now never found in the countless thousands which formerly swarmed over the plains of the Transvaal and Bechuanaland, springbuck are still

abundant in many districts. Protected to a certain degree by law, they are to be met with in parts of Cape Colony and the Orange River Colony; while on the plains bordering the Botletli and the neighbouring salt-pans, as well as in Great Namaqualand, Damara-land, and the Ovampo Flats, they occur in large numbers. Springbuck-stalking on the open veldt affords excellent rifle-practice; zest being added to the sport from the fact that the venison is most excellent for the table.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ 19	5	20 $\frac{1}{2}$	Kalahari . . .	The late W. F. Webb.
-18 $\frac{3}{8}$	...	12 $\frac{1}{2}$	?	P. C. Keytel.
-17	...	...	Middleburg Flats . .	F. H. Barber. (See illustration.)
-16 $\frac{1}{2}$	...	...	Bechuanaland . . .	Vryburg Club.
-16	...	6 $\frac{1}{2}$	Griqualand West . .	Capt. G. S. Leslie.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	?	Hon. T. Thynne.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	5	?	Julius Jeppe.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	...	?	Dr. Maloney.
15 $\frac{1}{2}$	6 $\frac{1}{8}$	3 $\frac{1}{2}$	Cape Colony . . .	C. D. Rudd.
-15 $\frac{1}{2}$	6	2 $\frac{3}{4}$	S. of Great Namaqualand	Th. Rehbock.
15 $\frac{1}{2}$	...	...	?	J. Rosen.
-15 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{8}$	?	Dr. W. P. Y. Bainbrigge.
15 $\frac{1}{8}$	5 $\frac{1}{2}$	7	?	Major W. Anstruther Thomson.
15 $\frac{1}{8}$	6 $\frac{1}{2}$	5 $\frac{7}{8}$	Ovampo Flats . . .	Capt. F. Cookson.
15	5 $\frac{3}{4}$	7	?	George Grey.
15	5 $\frac{1}{2}$	8 $\frac{1}{4}$	?	Capt. E. J. Lugard.
-15	6	6 $\frac{1}{4}$	?	A. Ohlsson.
-15	...	...	Langberg, Kimberley .	South-African Museum.
-15	...	10	?	Major James Grant.
-14 $\frac{1}{2}$	...	...	?	Alfred Ebdon.
14 $\frac{1}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{2}$	?	C. L. Blundell.
14 $\frac{1}{4}$	6 $\frac{1}{4}$	5	?	C. Ansell.
14 $\frac{1}{4}$	6	2 $\frac{3}{4}$	?	C. Challis.

¹ A malformed specimen.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
14	$5\frac{3}{4}$	$4\frac{1}{4}$	?	British Museum.
14	6	3	?	Hon. J. C. Lyttelton.
14	$5\frac{1}{2}$	5	?	F. E. Potter.
$13\frac{7}{8}$	6	$5\frac{3}{8}$	Griqualand . . .	F. C. Selous.
$13\frac{3}{4}$	6	$5\frac{3}{4}$	?	Earl of Kingston.
$13\frac{5}{8}$	$5\frac{1}{4}$	$5\frac{5}{8}$	Benguela . . .	G. W. Penrice.
$13\frac{5}{8}$	$5\frac{1}{2}$	$4\frac{1}{4}$	Angola . . .	C. W. Sharp.
$13\frac{1}{2}$	$5\frac{1}{2}$	5	Do. . .	A. H. Harrison.
♀ $13\frac{1}{2}$	4	$6\frac{3}{4}$	?	Julius Jeppe.
♀ 13	...	...	Middleburg Flats . .	F. H. Barber.
♀ 13	...	...	South Africa . . .	Alfred Ebdon.
♀ $11\frac{1}{2}$	3	$6\frac{1}{4}$	Angola . . .	C. W. Sharp.



GOA or TIBETAN GAZELLE (*Gazella picticaudata*).

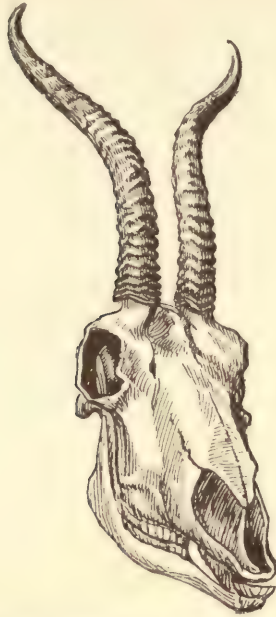
The true gazelles form a large group of delicately built antelopes. They are of medium or rather small size, with the muzzle of ordinary shape, the neck not unduly elongated, and no fold containing a crest of long erectile hairs down the middle of the back. To suit the nature of their haunts, their coloration is generally of a sandy hue, with the underparts white, and the face in most cases marked with parallel dark and light longitudinal streaks; dark bands being also frequently present on the rump and on the flanks to separate the tawny of the back from the white beneath. The knees are very generally furnished with brush-like tufts of long, stiff hairs; and the tail is either short or of medium length. With the exception of four species, horns are present in both sexes; those of the males being stout, distinctly ridged, and generally of about the same length as the head, although occasionally much longer. Except at the tips, they curve backwards, so as to present an anteriorly convex lower portion, above which they are generally more or less curved forwards and upwards. Gazelles have a wider geographical distribution than any other genus of antelopes, and are, for the most part, inhabitants of more or less desert regions, or their confines.

The Tibetan goa belongs to a small and aberrant group of the genus in which the tail is very short, the usual dark and light streaks on the face are wanting, and the females are hornless. As a species, it is distinguished by its comparatively small size, and the strongly

marked backward curvature of the horns, which are not hooked at the tips, as well as by the white rump and the absence of face-glands. Height at shoulder about 24 or 25 inches. Weight about 45 lbs.

Distribution.—The plateau of Tibet and some of the adjacent parts of Central Asia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{8}$	3 $\frac{5}{8}$	2	Hanle, Spiti . . .	Hon. Walter Rothschild.
13 $\frac{3}{4}$	3 $\frac{3}{4}$	3	Ladak . . .	Major G. F. Mockler.
-13 $\frac{1}{2}$	...	...	?	Lieut.-Col. T. Greenaway.
13 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{4}$	Hills N. of Sikkim .	British Museum (Hume Collection).
-13 $\frac{1}{4}$	4	...	Tibet . . .	Major-General A. A. A. Kinloch.
-13 $\frac{1}{4}$	3 $\frac{1}{2}$	3	Ladak . . .	Capt. H. W. Codrington.
13 $\frac{1}{8}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	Do. . . .	Capt. Neill Malcolm.
13 $\frac{1}{8}$	4	3 $\frac{5}{8}$	Tibet . . .	H. C. V. Hunter.
-13 $\frac{1}{8}$	3 $\frac{5}{8}$	6 $\frac{1}{4}$	S.E. of Hanle . .	P. H. G. Powell-Cotton.
-13	3 $\frac{3}{4}$	5 $\frac{3}{4}$	Tibet . . .	Bombay Natural History Society.
13	4 $\frac{1}{8}$	4 $\frac{1}{2}$	East Ladak . . .	Col. J. Biddulph.
13	3 $\frac{3}{4}$	1 $\frac{1}{2}$	?	Major C. B. Vandeleur.
-13	...	...	?	Indian Museum.
13	3 $\frac{3}{4}$	5 $\frac{3}{8}$	N. Sikkim . . .	Major A. Pearse.
-13	3 $\frac{5}{8}$	3 $\frac{1}{4}$	Near Hanle . . .	Capt. H. W. Codrington.
12 $\frac{7}{8}$	3 $\frac{7}{8}$	4 $\frac{3}{4}$	Hills N. of Kumaon	A. O. Hume.
12 $\frac{7}{8}$	3 $\frac{7}{8}$	4 $\frac{3}{8}$	?	British Museum (B. H. Hodgson).
12 $\frac{3}{4}$	4	6 $\frac{1}{4}$	Ladak . . .	Baroda State Museum.
12 $\frac{3}{4}$	4	4 $\frac{3}{4}$	?	Lord Stavordale.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	5 $\frac{1}{8}$	Near Hanle . . .	H. Z. Darrah.
12 $\frac{3}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Hanle . .	Col. F. C. Lister-Kay.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	Ladak . . .	David T. Hanbury.
-12 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $1\frac{3}{8}$	Tibet . . .	Paris Museum (Prince Henri d'Orléans).
12 $\frac{1}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
12 $\frac{1}{8}$	3 $\frac{5}{8}$	5	Ladak . . .	Capt. F. E. S. Adair.



Skull and Horns of Przewalski's Gazelle, from a specimen shot by Prince Demidoff.

PRZEWALSKI'S GAZELLE (*Gazella przewalskii*).

Nearly allied to the goa, from which it differs by its rather larger size, and the distinct hooks formed by the tips of the horns of the bucks. General colour in summer, deep fawn; in winter, pale finely grizzled fawn; white of buttocks running up in an angle on each side of the tail, which is very short, and almost concealed by the fur. Front of limbs more or less brown; no tufts of hair on the knees.

Distribution.—Mongolia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{1}{4}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	?	British Museum.
10	4	4 $\frac{5}{8}$	?	H.R.H. Henri de Bourbon, Comte de Bardi.
9 $\frac{3}{4}$	4 $\frac{1}{8}$	4 $\frac{3}{8}$	North of Pekin	British Museum (R. Swinhoe).
8 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{3}{8}$	North China	Paris Museum (Père A. David).



Skulls and Horns of Yarkand and Persian Races of the Goitred Gazelle. The specimens in the right top corner and lower central figure alone belong to the Persian. All three are in the Collection of Mr. A. O. Hume.

MONGOLIAN GAZELLE (*Gazella gutturosa*).

Jaeisw or *Sava-keek* in Turkestan. *Hwang-yang* in Mongolia.

Belonging to the same group of the genus as the goa, this larger species takes its scientific title from the peculiar swollen condition of the throat of the male during the pairing season. In addition to its size (height at shoulder about 30 inches), the species is characterised by the comparatively slight backward curvature of the horns, which are not hooked at the tips; the general colour being pale fawn, with the rump, flanks, and the whole of the limbs white.

Distribution.—Northern and Eastern Mongolia and the southern borders of Russian Transbaikalia. This gazelle was discovered by the Russian traveller Pallas, who described it as long ago as the year 1777.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	5	6.34	Lob Nor . . .	A. O. Hume.
15 $\frac{1}{8}$	4 $\frac{1}{4}$	7 $\frac{1}{4}$	Dscheran . . .	Dr. Albert von Stephani.
14 $\frac{3}{4}$	4 $\frac{7}{8}$	3	Chinese Turkestan .	Major C. S. Cumberland.
14 $\frac{5}{8}$	3 $1\frac{3}{8}$	4 $\frac{3}{4}$	Lob Nor . . .	Paris Museum (Prince Henri d'Orléans).
13 $\frac{3}{4}$	4 $\frac{7}{8}$	4 $\frac{1}{2}$	Chinese Turkestan .	E. L. Phelps.
13 $\frac{3}{4}$	5	4	Do. . .	J. V. Phelps.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	6	Saissan, West Siberia .	British Museum (Dr. O. Finsch).

GOITRED GAZELLE (*Gazella subgutturosa*).

A near relation of the Mongolian species, but distinguished by the much longer tail, of which the upper surface is crested with black, and the presence of dark and light markings on the face. These face-markings differ, however, from those of all other species save the Marica gazelle (*G. marica*) of Arabia, in that the upper portion of the face, in adult individuals of the typical race, is pure white, so that the central dark band is interrupted on the forehead. From the Marica the Goitred gazelle may be distinguished by its superior size (height at shoulder from 26 to 27 inches), and the absence of horns in the female. The larynx is swollen, forming a peculiar prominence on the front of the upper part of the throat.

There are three distinct local races of this gazelle, the ordinary Caspian and Persian *G. subgutturosa typica*, the Yarkand *G. s. yarcandensis*, distinguished by its superior dimensions and darker face-markings, and the Altai *G. s. sairensis*, in which the bodily size is large, but the horns are relatively small.

Distribution.—Western Asia from Asia Minor and Caucasus in the west to Turkestan, Yarkand, and Mongolia in the east.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14½	4	4½	Baluchistan . . .	Capt. T. W. Greenfield.
-14½	5½	6	Near Tiflis . . .	Clive Philipps-Wolley.
14½	4½	3	Wana Plain, Waziristan	A. J. Grant.
13½	4½	5	Persia . . .	Imperial Museum, Vienna.
13½	4½	4	Khelat . . .	A. O. Hume.
13	4½	4½	Persia . . .	E. Rennie.
-12½	3½	7	Syria . . .	Dr. Albert von Stephani.
12½	4	5½	Do. . .	Hon. Walter Rothschild.

A. The following specimens belong to the Altai race:—

11½	4½	6	Altai . . .	Sir Edmund G. Loder, Bart.
11	4½	4½	Do. . .	St. George Littledale.
11	4½	6½	Do. . .	A. Louw.
10½	4	6½	Do. . .	P. B. Vander-Byl.
10½	4	5½	Do. . .	Hon. Walter Rothschild.
10	4½	6	Do. . .	Prince E. Demidoff.
9½	4½	6½	Do. . .	Lord Elphinstone.

B. The undermentioned specimens belong to either the Yarkand or Altai races :—

Length on front curve.	Cir cum-ference.	Tip to Tip.	Locality.	Owner.
16 $\frac{5}{8}$	4 $\frac{1}{2}$	6 $\frac{3}{4}$	Kuldja . . .	Sir Edmund G. Loder, Bart.
16	5	3 $\frac{1}{4}$	Yarkand . . .	A. O. Hume.
15 $\frac{7}{8}$	5	3 $\frac{1}{4}$	Do.	Do.
14	4 $\frac{3}{4}$	5.75	Do.	Do.
14	5	5 $\frac{3}{4}$	Eastern Turkestan . .	Col. J. Biddulph.
13 $\frac{1}{2}$	4 $\frac{3}{4}$	6 $\frac{3}{8}$	Maralbashi . . .	David T. Hanbury.
-13 $\frac{3}{8}$	5 $1\frac{3}{8}$	7 $\frac{1}{8}$	Altai	Paris Museum (Prince Henri d'Orléans).
13	4 $\frac{5}{8}$	7 $\frac{1}{8}$	Maralbashi . . .	P. Church.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{3}{8}$	Altai	St. George Littledale.
-12	...	2	Maralbashi . . .	H. Lennard.



Skull and Horns of Male Yarkand Goitred Gazelle from Kuldja, in the possession of Sir Edmund G. Loder, Bart.



Head of Dorcas Gazelle.

DORCAS GAZELLE (*Gazella dorcas*).

This well-known species brings us to the more typical group of gazelles, in the members of which the central dark face-band is continued uninterruptedly up the forehead, and horns are developed in both sexes. Among the special characteristics of the present species may be noted the circumstance that the white area of the rump does not invade the fawn of the back, the indistinctness of the dark lateral band dividing the fawn of the upper-parts from the white beneath, and the perfectly lyrate form of the horns, which are of medium length, with the middle portion twisted outwardly, and the tips converging towards one another. Height at shoulder, 21 to 22 inches; total length about 42 inches. General colour pale fawn, of rather variable tint, with the face-markings distinct.

Distribution.—Morocco, Algeria, and thence eastwards through Egypt into Palestine and Syria. By the Arabs of Algeria this gazelle is known as rhozal or hemar.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{8}$	4 $\frac{1}{4}$	2 $\frac{1}{2}$	Algeria	Sir Edmund G. Loder, Bart.
13	4	3 $\frac{1}{2}$	El Obeid, Kordofan . .	Capt. J. G. A. Massy.
12 $\frac{3}{4}$	3 $\frac{7}{8}$	4	Algiers	A. Louw.
12 $\frac{5}{8}$	3 $\frac{3}{8}$	4 $\frac{5}{8}$	Sudan	Col. B. T. Mahon.
-12 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{8}$	Algeria	Viscount Edmond de Poncins.
12 $\frac{1}{2}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$	Southern Sahara . .	J. I. S. Whitaker.
12 $\frac{3}{8}$	3 $\frac{3}{8}$	...	Do. . . .	British Museum.
-12 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Do. . . .	A. E. Pease.
12 $\frac{1}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	Kordofan	Capt. J. H. Rivers.
12	4	3 $\frac{3}{4}$	Southern Sahara . .	J. H. Thomas.
11 $\frac{7}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	Do. . . .	Sir Victor Brooke's Collection.
-11 $\frac{3}{4}$	3 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	Julius Jeppe.
11 $\frac{5}{8}$	4	2 $\frac{1}{2}$	Sudan	Capt. G. S. Nickerson.
11 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{7}{8}$	Algeria	E. N. Buxton.
11 $\frac{3}{8}$	3 $\frac{3}{4}$	4	Do. . . .	A. Ohlsson.
♀ 11 $\frac{1}{4}$	2 $\frac{3}{16}$	5 $\frac{3}{4}$	Kordofan	Capt. J. H. Rivers.
10 $\frac{3}{4}$	4 $\frac{1}{4}$	2 $\frac{1}{4}$	Lake Chad	Capt. J. K. Cochrane.
-♀ 9 $\frac{7}{8}$	...	...	Algeria	A. E. Pease.

EDMI or ATLAS GAZELLE (*Gazella cuvieri*).

From the dorcas the present species may be readily distinguished by its superior size, the imperfectly lyrate form of the horns, which diverge more or less regularly upwards, the presence of a black spot on the tip of the muzzle, and the rough character of the hair. General colour dull fawn, with a very indistinct lateral band, well-defined face-markings, the lower portion of the tail crested with black, and the under-parts, buttocks, and inner surfaces of fore-legs pure white. Height at shoulder from 26 to 27 inches.

Distribution.—The mountains of Morocco, Algeria, and Tunisia, where it is known by the name of edmi or admi.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{7}{8}$	5	3 $\frac{5}{8}$	Algeria	Sir Edmund G. Loder, Bart.
14 $\frac{5}{8}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	N. Tunis	J. I. S. Whitaker.
-14 $\frac{1}{2}$	3 $\frac{7}{8}$	3 $\frac{1}{2}$	Algeria	A. E. Pease.
14 $\frac{1}{4}$	3 $\frac{3}{4}$	5 $\frac{1}{4}$	Southern Sahara . .	J. I. S. Whitaker.
14 $\frac{1}{4}$	3 $\frac{7}{8}$	5 $\frac{1}{2}$	Algeria	A. Louw.
14 $\frac{1}{4}$	4	3 $\frac{1}{4}$	Do.	F. H. Barber.
♀ 13 $\frac{7}{8}$	3 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	E. N. Buxton.
-13 $\frac{5}{8}$	4 $\frac{1}{4}$	5 $\frac{1}{2}$	Do.	Viscount Edmond de Poncins.
13 $\frac{3}{8}$	4 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	Hon. G. Gordon.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{5}{8}$	Do.	E. N. Buxton.
-12 $\frac{3}{4}$	...	...	Do.	Capt. J. Marriott.
-12 $\frac{3}{4}$	...	4 $\frac{1}{4}$	Do.	Major W. Anstruther Thomson.
12 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$	Do.	A. Ohlsson.
♀ 11	2 $\frac{1}{2}$	5 $\frac{7}{8}$	Do.	J. I. S. Whitaker.

ARABIAN GAZELLE (*Gazella arabica*).

Belonging to the same sub-group of the genus as the edmi, this elegant gazelle may be differentiated from that species by its smaller size, smoother hair, and darker coloration, the general tint of the upper-parts being dark smoky fawn, with the central face-band rufous fawn, and a black spot on the tip of the muzzle. Height at shoulder, 24 or 25 inches.

Distribution.—Western Arabia, where it is known as ghasal, its Syrian title being ariel or aiel. In spite of its being one of the commonest of the gazelles, and also one which can easily be obtained in captivity, very little authentic information is forthcoming as to its habits, and even its range is not yet fully determined.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
8½	4	2	Mocha, South Arabia	British Museum (W. T. Blanford).
♀ 7½	2	4½	?	Dr. Percy Rendall.
4½	3½	3½	South Arabia	Sir Victor Brooke's Collection.
♀ 4½	1½	2½	?	Major H. G. C. Swayne.



Head of Male Indian Gazelle.

INDIAN GAZELLE (*Gazella bennetti*).

Closely allied to the Arabian species, this gazelle (the chinkara of the natives and the ravine-deer of many Anglo-Indian sportsmen) is of smaller dimensions and much lighter colour; the height at the shoulder varying from 23 to 24 inches, and the general colour of the upper-parts being dull fawn.

Distribution.—Peninsular India, thence extending westward through Baluchistan to the shores of the Persian Gulf. In the *Book of Antelopes* Messrs. Sclater and Thomas remark that, like the lion and the hunting-leopard, this gazelle belongs to an African type, and appears to have been originally a migrant from the west into India, whence it has spread over the greater part of the peninsula. It should, however, be remembered that extinct gazelles and hunting-leopards occur in the north of India.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-15	5	...	Rajputana . . .	H.H. Maharaj Rana Bahadur of Jhalawar.
14½	4½	8½	Dholpur . . .	L. M. le Champion. (See illustration.)
-14½	...	...	Ferozepore District .	Captain Harry V. Brooke.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-14 $\frac{1}{4}$	...	6 $\frac{7}{8}$	Dholpur . . .	Mrs. W. W. Baillie.
-14 $\frac{1}{8}$	...	...	Sirsa District, Punjab	Major H. Trevor.
-14 $\frac{1}{8}$	...	4	?	Major W. Anstruther Thomson.
14	4 $\frac{3}{8}$	5 $\frac{3}{4}$	Ferozepore District .	Capt. Harry V. Brooke.
-14	...	...	Near Lahore . . .	Measured by General Kinloch.
-13 $\frac{7}{8}$	4 $\frac{1}{4}$	6 $\frac{1}{2}$	Do. . . .	C. P. Down.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	7	?	Sir Victor Brooke's Collection.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	8 $\frac{1}{2}$	Sind	L. Napier.
13 $\frac{5}{8}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	Bikanir	Capt. C. F. Vander-Byl.
13 $\frac{1}{2}$	4 $\frac{1}{4}$	6 $\frac{3}{8}$	Muttra, N.W.P. .	Major G. F. Mockler.
13 $\frac{1}{4}$	4	4 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
13 $\frac{1}{4}$	4	6 $\frac{1}{4}$	?	Major O. A. Chambers.
-13 $\frac{1}{4}$	4 $\frac{1}{4}$	...	Delhi	Major-General A. A. A. Kinloch.
-13 $\frac{1}{8}$	4 $\frac{1}{2}$	4	Hissar	Major P. J. Gordon.
13	3 $\frac{1}{2}$	6	Bikanir	Major H. C. Morland.
-13	3 $\frac{1}{8}$	3 $\frac{1}{8}$	Gwalior	Viscount Edmond de Poncins.
-13	4 $\frac{1}{4}$	5	?	Major Colvin Stewart.
13	3 $\frac{3}{4}$	6	?	Lieut.-Col. R. H. Rattray.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Goorgaon, Punjab .	A. O. Hume.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	?	H. C. V. Hunter.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	5 $\frac{7}{8}$	North Punjab . .	Col. J. Biddulph.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	7	?	Capt. L. I. B. Hulke.
-12 $\frac{3}{4}$	4 $\frac{1}{8}$	6 $\frac{1}{8}$	Bikanir	Sir Philip Grey Egerton, Bart.
-12 $\frac{3}{4}$	4 $\frac{3}{4}$	6 $\frac{3}{4}$	Do. . . .	Capt. H. W. Codrington.
-12 $\frac{3}{4}$	4	6	Jodhpore	H.H. the Maharajah of Bikanir.
12 $\frac{1}{2}$	4 $\frac{1}{4}$	5 $\frac{1}{4}$	Bikanir	Lieut.-Col. G. D. F. Sullivan.
-12 $\frac{1}{2}$	...	...	?	H.H. the Maharaja of Travancore.
12 $\frac{3}{8}$	4	5 $\frac{1}{2}$	Simrol, Bengal . .	British Museum (Colonel Evans).
12 $\frac{3}{8}$	4 $\frac{1}{8}$	6	Do. . . .	P. B. Vander-Byl.
9 7 $\frac{1}{8}$	5	2 $\frac{1}{4}$	?	Sir Victor Brooke's Collection.

Length on
front curve.Circum-
ference.

Tip to Tip.

Locality.

Owner.



Head of Male Speke's Gazelle.

SPEKE'S GAZELLE (*Gazella spekei*).*Dhero* of the Somalis.

From the edmi and its allies, with which it agrees in its leading characteristics, this very peculiar gazelle is readily distinguished by the development of a flabby corrugated elevation on the skin of the nose; the general colour of the upper-parts being pale brownish fawn, with the lateral band darker than in the other members of the sub-group. Height at shoulder from 23 to 24 inches.

The protuberance on the nose is probably connected with the sexual function; in dead specimens it exhibits a slight cavity beneath the skin which can be inflated by blowing air into the nostrils, and it is therefore probably capable of distension during life.

Distribution.—The plateau in the interior of Somaliland.

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
-12½	...	3½	P. C. Keytel.
-12	3½	5½	Viscount Edmond de Poncins.
-12	...	...	J. Menges.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
11 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	Major H. G. C. Swayne.
11 $\frac{5}{8}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	Major-Gen. A. Paget.
11 $\frac{1}{2}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	T. W. H. Clarke.
11 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Lieut.-Col. H. D. Olivier.
11 $\frac{1}{4}$	4	4	W. H. Cobb.
11 $\frac{1}{8}$	4	5 $\frac{1}{4}$	C. Liddell.
11	4	4 $\frac{1}{2}$	J. H. Whitehouse.
11	4	4	A. H. Straker.
11	3 $\frac{7}{8}$	5	Major H. C. Morland.
11	4 $\frac{1}{8}$	3 $\frac{5}{8}$	Lord Delamere.
10 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{3}{4}$	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	4 $\frac{5}{8}$	5 $\frac{1}{4}$	Capt. B. R. M. Glossop.
10 $\frac{3}{4}$	4	4	R. M'D. Hawker.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	3	C. N. Welsh.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	E. Lort-Phillips.
10 $\frac{3}{4}$	4	3 $\frac{3}{4}$	Capt. B. Vincent.
10 $\frac{3}{4}$	4	4 $\frac{3}{4}$	A. Louw.
10 $\frac{5}{8}$	3 $\frac{1}{8}$	4 $\frac{1}{4}$	Major G. F. T. Leather.
- ♀ 9 $\frac{7}{8}$	...	...	J. Menges.
♀ 9 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{4}$	T. W. H. Clarke.



Head of Male Pelzeln's Gazelle.

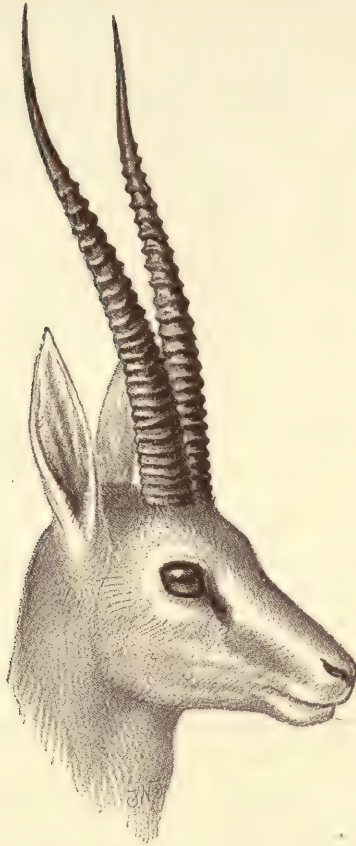
PELZELN'S GAZELLE (*Gazella pelzelni*).

This species, the lowland gazelle of Somaliland, is nearly related to the last, from which it differs by the absence both of the corrugated elevation on the nose and of the black spot on the muzzle. It is also slightly larger than Speke's gazelle, the height at the shoulder being about 25 inches; and its colour is somewhat more rufous, the light lateral band being distinct, and the dark band rufous brown only slightly darker than the back, without any tendency to blackness. The dark and light bands on the cheeks are relatively short and indistinct.

Distribution.—The plains of Northern Somaliland, bordering the sea. Within fifty miles of the shore this gazelle is exceedingly numerous, and may often be seen in large herds. It is termed by the natives *dhero*, in common with Speke's gazelle.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
-13 $\frac{3}{16}$	...	...	J. Menges.
-13 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	P. C. Keytel.
13 $\frac{1}{8}$	...	...	J. Rosen.
12 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Major H. G. C. Swayne.
12 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	Lord Delamere.
-12 $\frac{5}{16}$	3 $\frac{3}{4}$	4	Capt. M. M'Neill.
12 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	The late W. Babington.
-12	3 $\frac{1}{4}$	4 $\frac{3}{4}$	Count E. Hoyos.
-12	...	...	Sir E. Lechmere, Bart.
12	3 $\frac{3}{4}$	4 $\frac{1}{8}$	Capt. G. Campbell.
12	3 $\frac{3}{4}$	5 $\frac{1}{2}$	Viscount Edmond de Poncins.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	T. W. H. Clarke.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Major H. C. Morland.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5	Capt. W. H. Williamson.
11 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	W. F. Whitehouse.
11 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	A. H. Straker.
11 $\frac{1}{4}$	3 $\frac{7}{8}$	4 $\frac{3}{8}$	Rowland Ward.
11 $\frac{1}{4}$	4	3 $\frac{1}{2}$	Sir Edmund G. Loder, Bart.
11 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	Major G. F. T. Leather.
11 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Major-Gen. A. Paget.
11 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Hon. Walter Rothschild.
11	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Capt. Neill Malcolm.
11	3 $\frac{3}{4}$	4 $\frac{1}{8}$	A. S. Trevor.
11	3 $\frac{3}{4}$	3 $\frac{3}{4}$	R. M'D. Hawker.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	4	A. Bayley-Worthington.
10 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	F. G. Gunnis.
9 $\frac{5}{8}$	...	...	J. Menges.
8 $\frac{1}{4}$	2 $\frac{1}{8}$	3 $\frac{1}{2}$	W. F. Whitehouse.
9 $\frac{1}{8}$	1 $\frac{7}{8}$	3 $\frac{3}{4}$	Julius Jeppe.



Head of Male Loder's Gazelle.

LODER'S GAZELLE (*Gazella leptoceros*).

Arab name, *Rhim*.

Although originally described so long ago as the year 1842, very little was known of this gazelle till specimens were procured by Sir E. G. Loder, and described as a new species under the name of *G. loderi*. Further investigation proved them to be inseparable from the species named by F. Cuvier. Agreeing with the preceding members of the group in the white of the rump not invading the haunches, the species is easily recognisable by the long and slender form of the horns, and the very pale tone of the coloration of the upper-parts, which may be described as pale sandy fawn, with the characteristic gazelline

markings only indistinctly defined. On the face the dark streaks are sandy instead of rufous; and the light bands on the flanks are almost imperceptible, while the dark ones below them are pale sandy with the very slightest tinge of brown; the tail being sandy at the base and gradually darkening to brownish black towards the tip. In the male the horns are about twice the length of the head, very slender, and closely and heavily ridged almost to the tips. Height at shoulder about 28 inches. Weight, 34 lbs.

Distribution.—The sandy tracts of the interior of Algeria, Tunisia, and Western Egypt, thence extending southwards into Nubia and Sennar. The native name is rhem or rhim (reem).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{7}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	South of Biskra . .	Dr. Dawtrey Drewitt.
15 $\frac{3}{4}$	4	4 $\frac{1}{4}$	Southern Tunisia . .	J. I. S. Whitaker.
15 $\frac{3}{4}$	3 $\frac{3}{4}$	8 $\frac{1}{2}$	Do. . .	Sir Edmund G. Loder, Bart.
-15	...	...	?	J. Rosen.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Biskra . .	F. H. Barber.
-14 $\frac{1}{2}$	3 $\frac{1}{2}$	3	?	P. C. Keytel.
14 $\frac{7}{18}$	3 $\frac{7}{8}$	4 $\frac{3}{4}$	Algeria . .	Julius Jeppe.
14 $\frac{1}{4}$	3 $\frac{1}{2}$	10 $\frac{1}{4}$	Do. . .	Sir Edmund G. Loder, Bart.
-14	...	...	Southern Tunisia . .	W. J. Corder.
14	3 $\frac{7}{8}$	3	Algeria . .	Hon. R. A. Ward.
-14	3 $\frac{5}{8}$	5 $\frac{1}{4}$	Tue Erg . .	A. E. Pease.
14	3 $\frac{3}{4}$	4 $\frac{3}{4}$	Algeria . .	Mr. Justice Hopley.
13 $\frac{5}{8}$	3 $\frac{5}{8}$	5 $\frac{1}{2}$	Do. . .	W. E. Pease.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Southern Tunisia . .	Sir Edmund G. Loder, Bart.
-13 $\frac{1}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Sahara . .	Viscount Edmond de Poncins.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Do. . .	A. Louw.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Southern Tunisia . .	J. I. S. Whitaker.
13 $\frac{1}{4}$	4 $\frac{1}{4}$	5 $\frac{1}{8}$	Fayoum, Egypt . .	Capt. S. S. Flower.
♀ 11 $\frac{3}{4}$	2	3 $\frac{3}{8}$	?	Julius Jeppe.
♀ -11 $\frac{5}{8}$	...	...	Southern Tunisia . .	J. Menges.

ISABELLA GAZELLE (*Gazella isabella*).*Gannai* of the natives.

In all the foregoing gazelles with horns in both sexes, the horns themselves have their tips slightly curved either inwards or upwards, and never bent back so as to form a right angle with the basal portion. On the other hand, the present species and the Muscat gazelle (*G. muscatensis*), while resembling the foregoing in the shape of the white rump-patch and the comparatively light tint of the flank-band, differ by the tips of the horns being hooked inwards or upwards so as to form nearly or completely a right angle. From its ally the present species differs by the pale fawn-colour of the upper-parts; the lateral bands and other markings being also fawn, instead of blackish. Height at shoulder about 25 inches.

Distribution.—The Red Sea littoral from Suakin to Massowa, and through the interior to Bogosland, Barca, and Taka.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	4 $\frac{5}{8}$	Sudan . . .	Major C. Levita.
10 $\frac{3}{4}$	4 $\frac{1}{4}$	3 $\frac{7}{8}$	El Obeid . . .	Capt. J. G. A. Massy.
10 $\frac{1}{2}$	3 $\frac{3}{4}$	4	White Nile . . .	Hon. F. E. Guest.
10 $\frac{1}{2}$	3 $\frac{5}{8}$	6 $\frac{1}{4}$	Sudan . . .	P. C. Lord.
10 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{3}{4}$	Anseba River, Abyssinia	Sir Victor Brooke's Collection.
10 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{7}{8}$	Near Suakin . . .	Major W. Anstruther Thomson.
10 $\frac{5}{8}$	3 $\frac{3}{4}$	4	Komayli, Abyssinia.	(British Museum) W. T. Blanford.
10	3 $\frac{3}{4}$	4	Eastern Sudan . .	A. W. Haig.
9.14	4	3	Between Suakin and Kassala	Prince Henry of Liechtenstein.
♀ 7	2	3	Do.	Sir Victor Brooke's Collection.
♀ 7	1 $\frac{7}{8}$	2 $\frac{3}{8}$	Kordofan . . .	British Museum.

HEUGLIN'S GAZELLE (*Gazella tilonura*).

This well-marked species brings us to a small sub-group in which the dark band on the flanks is very strongly defined, and black in colour; the present species being distinguished from its allies by the abrupt inward hooking of the tips of the horns. The general colour is deep sandy, with the central face-band but little darker than the back, no black nose-spot, and the tail sandy at the base but black elsewhere. Height at shoulder about 27 inches.

Distribution.—Bogosland, in North-Eastern Africa. Very little is known of this rare species.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{1}{4}$	4	2 $\frac{1}{2}$	Eastern Sudan	Lieut.-Col. Hon. W. Coke.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	?	E. Lort-Phillips.
10 $\frac{3}{4}$	4	2 $\frac{1}{8}$	Bogosland	British Museum.
10 $\frac{1}{2}$	4 $\frac{3}{8}$	3	Near Kassala	Prince Colloredo Mannsfeld.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	4 $\frac{1}{4}$	Basaland	Hon. Walter Rothschild.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	2 $\frac{7}{8}$	?	Col. Ralph Vivian.
9 $\frac{7}{8}$	4 $\frac{3}{8}$	1 $\frac{7}{8}$	Bogosland	Sir Victor Brooke's Collection.
9 $\frac{3}{4}$	4 $\frac{1}{4}$	1 $\frac{7}{8}$	Bahr-el-Ghazel	F. H. Barber.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	3 $\frac{3}{4}$	?	Capt. H. H. S. Morant.
♀ 6 $\frac{1}{2}$	...	...	Eastern Sudan	J. Menges.
♀ 5 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Abyssinia	Sir Victor Brooke's Collection.



Shot by the late Capt. H. J. Majendie.

SENEGAL or RED-FRONTED GAZELLE (*Gazella rufifrons*).

El Hamra of the Dinkas.

This medium-sized and rather stoutly built species agrees with Heuglin's gazelle in the black flank-stripe, but differs by the absence of a distinct inward hooking of the tips of the horns; the general colour being deep sandy rufous, brightening into rich rufous on the forehead and muzzle, without a black nose-spot. The knee-tufts so generally present in gazelles are wanting; and the tail, with the exception of the sandy upper surface of the basal portion, is black. Horns relatively small, regularly divergent, curving at first slightly backwards and then forwards, heavily ridged till the terminal two or three inches.

Distribution.—Senegal and Gambia.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
12 $\frac{3}{4}$	5 $\frac{1}{2}$	5	White Nile . .	Capt. L. Rawstorne.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	4	Do. . .	P. Niedieck.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
12 $\frac{3}{8}$	4 $\frac{7}{8}$	7	White Nile . .	R. M'D. Hawker.
12 $\frac{5}{8}$	4 $\frac{5}{8}$	6 $\frac{5}{8}$	Do. . .	H. Cookson.
12 $\frac{3}{8}$	5	4 $\frac{1}{4}$	Do. . .	C. Cookson.
12 $\frac{1}{4}$	4 $1\frac{0}{8}$	5 $\frac{3}{8}$	Do. . .	Col. B. T. Mahon.
12 $\frac{1}{8}$	4 $\frac{3}{4}$	5 $\frac{3}{4}$	Do. . .	Col. H. W. Guinness.
12	4 $\frac{5}{8}$	5 $\frac{5}{8}$	Do. . .	Capt. J. F. Wolseley.
12	4 $\frac{1}{4}$	6	Do. . .	Lieut. W. B. Drury, R.N.
11 $\frac{7}{8}$	5	4 $\frac{1}{4}$	Reahat, Sudan . .	Prince Colloredo Mannsfeld.
11 $\frac{7}{8}$	4 $\frac{1}{4}$	6 $\frac{3}{4}$	El Obeid . .	Capt. J. G. A. Massy.
11 $\frac{3}{4}$	4 $\frac{1}{2}$	4 $\frac{1}{4}$	Do. . .	H. F. Buxton.
11 $\frac{3}{4}$	5	5 $\frac{1}{4}$	Do. . .	W. D. James.
11 $\frac{5}{8}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Do. . .	Lord St. Oswald.
11 $\frac{5}{8}$	4 $\frac{3}{4}$	5	Do. . .	C. Liddell.
11 $\frac{5}{8}$	7 $\frac{7}{8}$	5 $\frac{1}{2}$	Do. . .	Capt. J. H. Rivers.
11 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{5}{8}$	White Nile . .	Capt. R. A. Markham.
11 $\frac{3}{8}$	4 $\frac{5}{8}$	3 $\frac{1}{4}$	Sudan . .	Capt. H. H. S. Morant.
11	4 $\frac{3}{4}$	6	Blue Nile . .	Hon. Walter Rothschild.
11	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Northern Nigeria .	Capt. D. F. MacCarthy Morrogh.
10 $\frac{7}{8}$	4 $\frac{3}{8}$	3	White Nile . .	Julius Jeppe.
10 $\frac{5}{8}$	4 $\frac{3}{8}$	4 $\frac{1}{2}$	Lake Chad . .	Capt. J. K. Cochrane.
10 $\frac{5}{8}$	4 $\frac{1}{4}$	4 $\frac{3}{8}$	Sudan . .	Capt. G. S. Nickerson.
10 $\frac{1}{2}$	4 $\frac{3}{8}$	6 $\frac{3}{8}$	Senegal . .	Sir Victor Brooke's Collection.
10 $\frac{1}{4}$	4 $\frac{1}{4}$	4	Blue Nile . .	Count J. Potocki.
10	4 $\frac{3}{4}$	3 $\frac{1}{2}$	Northern Nigeria .	Col. T. L. N. Morland.
♀ 9 $\frac{5}{8}$	2 $\frac{5}{8}$	2 $\frac{3}{4}$	Sudan . .	Lieut.-Col. W. H. Sitwell.
♀ 9 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{7}{8}$	Reahat, Sudan . .	Prince Colloredo Mannsfeld.
♀ 9	2 $\frac{3}{4}$	3 $\frac{7}{8}$	El Obeid . .	Capt. J. G. A. Massy.
♀ 8	2 $\frac{1}{4}$	4	White Nile . .	P. Niedieck.
7 $\frac{3}{4}$	4	3 $\frac{1}{8}$	Bida Niger, Sudan .	Capt. G. H. F. Abadie.
♀ 7	1 $\frac{3}{4}$	3 $\frac{1}{2}$	Do. . .	Do.



Head of Male of Thomson's Gazelle.

THOMSON'S GAZELLE (*Gazella thomsoni*).

Swahili name, *Swallah*. Masai name, *Engoli*.

The distinct black nose-patch and the great width of the black flank-band serve at once to distinguish this handsome species from *G. rufifrons*, with which it agrees in the general form of the horns. The general colour of the upper-parts is deep sandy rufous, with all the markings well developed and sharply defined; the central face-streak being a deeper rufous, and the light lateral band present, although only slightly paler than the back. There is also a narrow black band bordering the white on the sides of the rump; and knee-tufts are developed. The horns are long, and rather like those of the Indian gazelle on an enlarged scale. Height at shoulder about 25 inches.

Distribution.—The interior districts of British and German East Africa, from Lake Rudolf southwards to Irangi.

Measurements of 4 males and 1 female shot by Mr. F. J. Jackson.

	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Length	3	10	4	1	3	11½	4	4	3	8½
Height	2	1	2	3	2	1½	2	2	1	11½
Weight	52	lbs.	54	lbs.	56	lbs.	62	lbs.	32	lbs.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15½	5	3⅞	Masailand . . .	F. W. Belt.
15½	4¾	3¾	Do. . . .	F. J. Jackson.
15½	4½	8½	Do. . . .	E. Gedge.
15¼	4¾	4¾	Do. . . .	British Museum (F. J. Jackson).
15¼	4½	4½	East Africa . . .	Major A. E. Smith.
15⅞	4⅞	5⅞	Do. . . .	Lord Basil Blackwood.
15⅞	4¾	4¼	Do. . . .	R. Wahrmann.
15	4½	5¼	Do. . . .	Major C. U. Price.
14⅞	4½	3⅞	Do. . . .	R. J. Church.
-14⅞	3⅞	3¾	Do. . . .	Julius Jeppe.
14⅞	4½	4½	Do. . . .	Col. Trevor Ternan.
14¾	4¾	4½	Do. . . .	Lord Delamere.
14¾	5	4	Do. . . .	Douglas M'Douall.
14¾	4½	3½	Do. . . .	R. Meinertzhagen.
14⅞	4⅞	3¼	Do. . . .	Count E. Hoyos.
14½	4½	3	Do. . . .	C. C. Bowring.
14½	4	3¼	Do. . . .	Sir Edmund G. Loder, Bart.
-14½	4½	2½	Do. . . .	Count Scheibler.
-14½	4¾	5¾	Do. . . .	Capt. C. A. Sykes.
-14½	...	...	Masailand . . .	J. Rosen.
14¾	4¼	3⅞	East Africa . . .	Sir Robert Harvey, Bart.
14¼	5	4½	Do. . . .	F. C. Cobb.
14¼	4¼	5⅞	Masailand . . .	British Museum (H. C. V. Hunter).
14¼	5¼	4	East Africa . . .	Major E. J. Tickell.
14	4½	4¾	Do. . . .	Henry Charrington.
14	4½	5⅞	Do. . . .	F. C. Selous.
14	4¼	3	Do. . . .	S. L. Hinde.
-♀ 6½	...	2½	Do. . . .	C. Steuart Belton.
♀ 5½	1⅞	3⅞	Lake Naivasha . . .	F. J. Jackson.



Skulls and Horns of Grant's Gazelle (male and female), from Mr. A. H. Neumann's specimens.

GRANT'S GAZELLE (*Gazella granti*).

With this handsome species we reach the last group of the genus *Gazella*, which includes species, for the most part of large size, characterised by the fawn-colour of the back being invaded to a greater or less degree by the white of the rump. In the present animal the fawn of the back is cut off from the tail, which is included in the white rump-patch, and there is a dark streak on the hinder border of each side of this patch. On the neck and back the hair has a peculiar wavy appearance recalling that of watered silk. Height at shoulder about 38 inches; weight of male from 150 to 170 lbs., when cleaned about 115 lbs.

Distribution.—East Africa, throughout Masailand, and round Kilimanjaro, north of Baringo, and around Mount Elgon and the Suk country; generally on open grass-lands. Two well-defined local races of this species may be recognised. First, the typical race (*G. granti typica*), of the interior of East Africa, in which the dark

flank-bands are either wanting, or are present in young specimens below the light flank-band. Secondly, the northern race (*G. granti notata*), of Northern British East Africa, in which dark bands are present both above and below the light band, behind which they unite with each other. Although described by O. Thomas in 1897 as a local race, the latter form was raised by him to the rank of a distinct species in the following year.

Measurements of 4 male specimens shot by Mr. F. J. Jackson.

	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Length . . .	5	8	5	7	5	7	5	3
Height . . .	3	1 $\frac{1}{2}$	3	2 $\frac{1}{2}$	3	6 $\frac{1}{2}$	2	11
Horns . . .		28 $\frac{1}{4}$		27		24		20
Weight . . .		158 lbs.		167 lbs.		166 lbs.		135 lbs.
Locality . .	Lake Naivasha.		Lake Naivasha.		Lake Naivasha.		Njemp.	

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29	7	14	East Africa . . .	R. O. Preston.
29	6 $\frac{1}{2}$	20 $\frac{3}{4}$	Do. . . .	Sheffield Neave.
-28 $\frac{3}{8}$	7	14 $\frac{1}{4}$	Rift Valley . . .	C. Steuart Betton.
28 $\frac{1}{4}$	6 $\frac{5}{8}$	15 $\frac{5}{8}$	?	F. J. Jackson.
-28 $\frac{3}{16}$	7 $\frac{1}{4}$	16 $\frac{1}{8}$	Lake Nakuru . . .	Capt. M. M'Neill.
28	7 $\frac{1}{2}$	16	East Africa . . .	Douglas M'Douall.
28	6 $\frac{3}{4}$	24 $\frac{5}{8}$	Do. . . .	Capt. N. E. Playfair.
27 $\frac{7}{8}$	6 $\frac{5}{8}$	18 $\frac{3}{8}$	Do. . . .	H. C. V. Hunter.
-27 $\frac{3}{4}$	6 $\frac{7}{8}$	15 $\frac{3}{8}$	Do. . . .	Dr. Albert von Stephani.
27 $\frac{1}{2}$	6 $\frac{1}{2}$	16	Do. . . .	F. J. Jackson.
27 $\frac{1}{2}$	7	17	Do. . . .	Capt. D. H. Macdonell.
27 $\frac{1}{2}$	7 $\frac{1}{4}$	13	Naivasha . . .	Major G. S. M'Loughlin.
27 $\frac{1}{4}$	6 $\frac{1}{2}$	18 $\frac{7}{8}$	?	Sir Robert Harvey, Bart.
27	...	16	?	Sir John Willoughby, Bart.
27	7	12 $\frac{1}{2}$	East Africa . . .	H. T. Barclay.
-27	...	...	?	W. J. Corder.
-26 $\frac{7}{8}$	6 $\frac{1}{4}$	20 $\frac{3}{8}$	N.W. Masailand . . .	O. Neumann.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
26 $\frac{3}{4}$	7 $\frac{1}{8}$	...	East Africa . . .	F. C. Selous.
26 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Shores of Lake Naivasha .	A. H. Neumann.
26 $\frac{3}{4}$	7	14 $\frac{1}{2}$	East Africa . . .	A. Bayley Worthington.
26 $\frac{3}{4}$	7	15	Do. . . .	F. W. Belt.
26 $\frac{1}{2}$	7 $\frac{1}{4}$	3 $\frac{1}{4}$	Do. . . .	Lord Delamere.
26 $\frac{1}{2}$	7	12 $\frac{3}{4}$	Do. . . .	E. Wynstone Waters.
26 $\frac{1}{2}$	7 $\frac{1}{4}$	18	Do. . . .	Major A. E. Smith.
26 $\frac{1}{4}$	6 $\frac{3}{8}$	16 $\frac{3}{8}$	Do. . . .	Sir Victor Brooke's Collection.
26 $\frac{1}{4}$	7	14 $\frac{1}{2}$	Do. . . .	T. P. A. Holford.
26 $\frac{1}{4}$	7	14 $\frac{1}{2}$	Do. . . .	Major E. J. Tickell.
26 $\frac{1}{4}$	6 $\frac{1}{2}$	14 $\frac{3}{4}$	Lake Zuay . . .	V. Bell.
26	6 $\frac{3}{4}$	16 $\frac{3}{4}$	?	G. Chetwynd.
26	6 $\frac{1}{2}$	14 $\frac{1}{4}$	?	P. B. Vander-Byl.
26	7 $\frac{1}{4}$	15 $\frac{5}{8}$	N.E. of Lake Rudolf .	Lt.-Col. W. A. W. Lawson.
26	7	12 $\frac{5}{8}$	East Africa . . .	F. C. Selous.
-26	7 $\frac{1}{4}$	19 $\frac{1}{2}$	Do. . . .	Dublin Museum.
25 $\frac{3}{4}$	7	13 $\frac{3}{4}$	Do. . . .	T. N. Howard.
25 $\frac{3}{4}$	6 $\frac{3}{4}$	11 $\frac{1}{4}$	Do. . . .	Norman B. Smith.
-25 $\frac{3}{4}$	7 $\frac{1}{4}$	13	Do. . . .	J. ff. Darling.
24	7	17 $\frac{1}{4}$	Lake Rudolf . . .	A. E. Butter.
23	6 $\frac{1}{4}$	8 $\frac{5}{8}$	Lake Zuay . . .	Lord Hindlip.
♀ 17 $\frac{1}{2}$	3 $\frac{3}{4}$	9	East Africa . . .	H. C. V. Hunter.
♀ 17	...	6	Lake Jipé . . .	Sir John Willoughby, Bart.
♀ 16 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{5}{8}$	East Africa . . .	Lord Delamere.
♀ 15	4	6 $\frac{3}{4}$	Do. . . .	E. Gedge.



Skulls and Horns of Peters's Gazelle (male and female),
from Mr. A. H. Neumann's specimens.

PETERS'S GAZELLE (*Gazella petersi*).

Hidi of the Gallas.

This species belongs to the same group as Grant's gazelle and the aoul, showing the same extension of the white of the rump on to the back. It has a dark band separating the white of the rump from the fawn of the back, and differs from the other species showing the same feature by the fawn colour of the back being continued in the middle line on to the base of the tail, which is otherwise black. Height at shoulder about 26 to 32 inches.

Distribution.—Coast districts of East Africa.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
22 $\frac{1}{8}$	6 $\frac{3}{8}$	5 $\frac{7}{8}$	Shererini . . .	British Museum (F. J. Jackson).
20 $\frac{1}{2}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	Tana River . . .	C. Hankey.
20 $\frac{1}{2}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	Do.	Major H. de Préé.
20 $\frac{1}{2}$	...	10 $\frac{1}{8}$	? . . . .	J. B. Wheelwright.
20 $\frac{1}{4}$	6 $\frac{1}{8}$	8 $\frac{7}{8}$	Ndara Teita . . .	C. Steuart Betton.
19 $\frac{9}{16}$	6 $\frac{3}{8}$	6 $\frac{3}{8}$	? . . . .	Major E. G. Harrison.
19 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	Jubaland	Capt. M. M'Neill.
19	6	5 $\frac{1}{4}$	Taru Desert . . .	Lieut. G. H. Welch, R.N.
17 $\frac{3}{4}$	5 $\frac{1}{4}$	7 $\frac{3}{8}$	Near Pica Pica . .	A. H. Neumann.
♀ 10 $\frac{3}{8}$	3	4 $\frac{1}{2}$	Do.	Do.



Head of Scemmerring's Gazelle, from a male specimen shot by Mr. G. H. Cheetham.

AOUL or SÆMMERRING'S GAZELLE (*Gazella scemmerringi*).

Somali name, *Aoul*.

Abyssinian name, *Meidafhel*.

Abyssinian (Danakil) name,

Soudanese name, *Ora*.

Maédedo.

In addition to the forward extent of the white rump-patch, the leading characteristics of this handsome species are to be found in the absence of a black streak dividing the sides of the rump-patch from the fawn of the body, the black-tipped tail, and the very distinct inward hooking of the horns. The ears are long and bordered with black externally, and the face-markings well-defined and nearly black. Height at shoulder about 30 to 36 inches. Weight clean about 90 lbs.

Distribution.—The Abyssinian coast of the Red Sea, Berber, East Sennar, Danakil, and Somaliland; in the latter country occurring all over the Haud and Ogaden. The North Somali *Gazella sammerringi berberana* of Dr. Matschie is larger, darker, and with differently curved horns.

a. Gazella sammerringi berberana.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{3}{4}$	6 $\frac{3}{4}$	...	Somaliland	W. N. McMillan.
20 $\frac{3}{4}$	5 $\frac{3}{4}$	3 $\frac{5}{8}$	Do.	G. H. Cheetham.
20 $\frac{1}{4}$	6	4 $\frac{5}{8}$	Do.	Norman B. Smith.
20	5 $\frac{1}{4}$	5 $\frac{5}{8}$	Do.	Hon. Walter Rothschild.
20	5 $\frac{3}{4}$	4	Do.	Lieut.-Col. J. W. H. Flanagan.
20	6	7 $\frac{1}{4}$	Do.	A. Louw.
20	5 $\frac{1}{4}$	5 $\frac{1}{2}$	Danakil	Viscount Edmond de Poncins.
♀ -20	...	5 $\frac{3}{4}$	Somaliland	A. E. Pease.
-20	...	3	Do.	Sir E. Lechmere, Bart.
-20	5 $\frac{7}{8}$	6 $\frac{1}{2}$	Do.	Capt. M. McNeill.
19 $\frac{3}{4}$	5 $\frac{5}{8}$	5 $\frac{1}{4}$	Do.	Count J. de Bylands.
-19 $\frac{3}{4}$	5 $\frac{1}{8}$	5 $\frac{3}{8}$	The Haud	P. H. G. Powell-Cotton.
19 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	N. Somaliland	Julius Jeppe.
-19 $\frac{1}{4}$	...	...	Do.	J. Menges.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{5}{8}$	Somaliland	T. W. H. Clarke.
19 $\frac{1}{2}$	5 $\frac{9}{10}$	2	Do.	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Capt. J. J. Richardson.
-19 $\frac{1}{2}$	6 $\frac{1}{4}$	3	Do.	S. Payne-Gallwey.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{5}{8}$	Do.	Count J. Potocki.
19 $\frac{1}{2}$	5 $\frac{1}{4}$	15 $\frac{1}{4}$	Do.	R. McD. Hawker.
19 $\frac{1}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	Do.	T. W. H. Clarke.
19 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{2}$	Do.	Capt. B. L. Carew.
19	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Do.	A. E. Butter.
19	5	4	Do.	Major-Gen. A. Paget.
19	5 $\frac{1}{4}$	4 $\frac{3}{4}$	Do.	J. Benett-Stanford.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
19	5	7½	Somaliland . .	Capt. B. R. M. Glossop.
19	5½	5½	Do. . .	F. G. Barclay.
19	6	2¾	Do. . .	W. Macmillan.
19	4	3¼	Do. . .	Prince Nicolas Ghika.
18¾	5½	4¾	Danakil . .	Lord Hindlip.
18¾	5½	6	Somaliland . .	F. H. Barber.
♀ 18¼	...	6	Do. . .	T. W. H. Clarke.
-18¼	5½	6¾	Do. . .	O. Neumann.
♀ 18⅞	3½	8½	Do. . .	Sir Edmund G. Loder, Bart.

b. Gazella søemmerringi typica.

17	5	5	Sudan . . .	Count J. Potocki.
16½	5¾	3½	Do. . .	Prince Colloredo Mannsfeld.
16	5¼	5	Do. . .	Lieut. A. H. Home, R.N.
-16	...	...	Do. . .	Capt. N. E. Playfair.
15¾	5½	5¾	Do. . .	Capt. H. H. S. Morant.
15½	5¼	3¾	Do. . .	P. C. Lord.
15½	5¾	5	Do. . .	Col. Ralph Vivian.
15½	5¼	3½	Do. . .	Capt. L. Rawstorne.
♀ 15¼	2¾	7¾	Do. . .	Lieut.-Col. Hon. W. Coke.
14¾	5½	4¼	Near Suakin . .	B. Cotton.
-14¾	5½	3½	?	Major W. Anstruther Thomson.
14½	5½	3¾	Blue Nile . .	Hon. F. E. Guest.
14½	5½	6¼	Sudan . .	Julius Jeppé.
♀ 13¾	3	6½	Do. . .	Count J. Potocki.
13¾	3¼	5¾	East Suakin . .	A. W. Haig.



Head of Addra Gazelle, shot by Prince Henry of Liechtenstein.

RED-NECKED or ADDRA GAZELLE (*Gazella ruficollis*).

Riäl of the Dinkas.

The last three representatives of the genus *Gazella* are not only the largest of the tribe, but are distinguished from all their relatives by the white of the rump extending on to the tail (which is either wholly white or merely tipped with fawn) coupled with the complete absence of a black band between the white of the rump-patch and the fawn of the body; the horns being hooked upwards and forwards, and not distinctly inwards. In the present species, which measures about 36 inches at the shoulder, the neck and front portion of the back alone display a distinctly rufous tint, the lines of division between the fawn of the upper-parts and the white beneath being obscure.

Distribution.—Kordofan and Sennar.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-13½	4½	8½	Nubia	Imperial Museum, Vienna.
-13½	5½	7½	?	Major W. Anstruther Thomson.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13	5 $\frac{3}{8}$	5 $\frac{1}{2}$	Kordofan	Col. B. T. Mahon.
12 $\frac{1}{4}$	4	5 $\frac{5}{8}$	Sennar	British Museum.
12	5 $\frac{1}{2}$	3 $\frac{3}{4}$	Kordofan	Lieut.-Col. E. B. Wilkinson.
11 $\frac{5}{8}$	5 $\frac{5}{8}$	4 $\frac{1}{4}$	Do.	British Museum (Capt. H. N. Dunn).
♀ 11 $\frac{5}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	Col. B. T. Mahon.
-10 $\frac{1}{2}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	Lake Chad	Dublin Museum.
♀ 10	3 $\frac{1}{2}$	3 $\frac{1}{4}$	Do.	Capt. T. K. Cochrane.

DAMA GAZELLE (*Gazella dama*).

Together with its northern representative the mhorr of Morocco, the dama differs from the addra by the rufous tint extending completely over the body and flanks, and being well defined from the white of the under-parts. In the present form, which is from Senegal, the sides of the thighs are white, so that the rufous of the body is cut off from that of the hind-legs. The height is at least 35 inches.

Distribution.—Senegambia and adjacent districts.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	5 $\frac{3}{4}$	3 $\frac{1}{4}$	Lake Chad	Capt. D. F. MacCarthy Morrogh.
-12 $\frac{5}{8}$	5 $\frac{5}{8}$	5 $\frac{1}{2}$	?	Paris Museum.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	6	?	Mr. Justice Hopley.
-12 $\frac{1}{4}$	5 $\frac{1}{8}$	3 $\frac{5}{8}$	Senegambia	Paris Museum.
8 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	?	Hon. Walter Rothschild.

MHORR or SWIFT GAZELLE (*Gazella dama mhorr*).

Although commonly regarded as a distinct species, this fine but somewhat leggy gazelle seems to be only a northern race of the dama gazelle of Senegal, which is the largest member of the genus. The mhorr, as it is called by the Arabs, differs from the dama by the sides of the thighs and legs being of the same rufous hue as the body, instead of white. Height at shoulder at least 34 $\frac{1}{2}$ inches.

Distribution.—The desert districts of South-West Morocco.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	6	3 $\frac{3}{4}$	Wednoon, Mogador	British Museum (W. Willshire).
-4 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	Morocco	Dr. Percy Rendall.



Skull and Horns of Male Dibatag, from a specimen shot by Mr. T. W. H. Clarke in Somaliland.

DIBATAG (*Ammodorcas clarkei*).

Although resembling the true gazelles in the face-markings, the dibatag, as it is called by the Somalis, is so different from these animals as to be entitled to constitute a genus by itself; being in many respects intermediate between the former and the gerenuk. The horns, which are present only in the males, are rather short, and have a regular upward and forward curvature, somewhat like those of a reedbuck; they are ridged on the front for a considerable portion of their length. The neck is considerably elongated, and the tail long and thin. The general colour of the upper-parts is a deep cinnamon. Height at shoulder about 33 inches; weight from 65 to 70 lbs. When running, the long neck is thrown back towards the tail, which is elevated, so that the two look as though they would touch. Discovered by Mr. T. W. H. Clarke.

Distribution.—Central Somaliland, in the eastern districts of the Haud.

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
-13	...	...	J. D. Inverarity.
-13	...	...	J. Menges.
12 $\frac{5}{8}$	5 $\frac{1}{4}$	4 $\frac{5}{8}$	Hon. Walter Rothschild.
11 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{5}{8}$	Major-Gen. A. Paget.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	T. W. H. Clarke.
-11 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Capt. J. Brander Dunbar.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	6	R. McD. Hawker.
11 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Major J. E. Gough.
-11 $\frac{1}{8}$	4 $\frac{1}{2}$	5 $\frac{5}{16}$	Capt. M. M'Neill.
11	5 $\frac{1}{2}$	2 $\frac{1}{4}$	Capt. B. R. M. Glossop.
11	5	5 $\frac{1}{2}$	S. Payne-Gallwey.
-10 $\frac{7}{8}$	4 $\frac{1}{4}$	5	P. C. Keytel.
10 $\frac{3}{4}$	4 $\frac{1}{4}$	4 $\frac{3}{4}$	Mr. Justice Hopley.
10 $\frac{3}{4}$	5 $\frac{1}{2}$	4	Sir Edmund G. Loder, Bart.
-10 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	A. E. Pease.
10 $\frac{3}{8}$	4 $\frac{3}{4}$	3 $\frac{1}{4}$	W. Macmillan.
-10 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	Major W. Anstruther Thomson.
10 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{1}{2}$	P. H. G. Powell-Cotton.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{8}$	British Museum (T. W. H. Clarke).



Head of Male Dibatag.



Head of Male Gerenuk.



Record Head of Male Gerenuk, from a specimen shot by H.R.H. le Duc d'Orléans.

GERENUK (*Lithocranius walleri*).

Somali name, *Gerenuk*. Danakil name, *Gudan Godu*.

Galla name, *Gügüfto*.

Even more aberrant than the last is the gerenuk, in which the elongation of the neck attains its supreme development, while the slender legs are lengthened in proportion. Horns are wanting in the females, and those of the males curve forwards at the tips, where the ridges stop, in a peculiarly characteristic manner. The general colour of the upper-parts is a deep rufous fawn, but down the middle of the back runs a broad dark-brown band, nearly eight inches in width. The skull is characterised by its dense and solid structure, as well as by its straightness, the shortness of the facial portion, and the very

small size of the cheek-teeth. Height at shoulder, 41 inches; weight 115 lbs.

This antelope, first described by the late Sir V. Brooke on the evidence of a flat skin, is in the habit of raising itself on its hind-legs when browsing, and is thus enabled to reach boughs at a very considerable distance above the ground.

Herr Oscar Neumann pointed out in 1899 that the Somali and Abyssinian gerenuk (*Lithocranius walleri sclateri*) is somewhat different from the East African or typical gerenuk. The northern form is larger, with finer horns, a longer neck, a less rufous colour, and lacks the black knee-tufts, while the white markings of the tail are also different. Sclater's gerenuk is treated as a distinct species by Messrs. Sclater and Thomas, but is better regarded as a local race or subspecies.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Somaliland . . .	H.R.H. le Duc d'Orléans. (See illustration.)
-16 $\frac{3}{4}$	...	...	Do. . . .	Lieut.-Col. H. G. Mainwaring.
-16 $\frac{1}{2}$	5 $\frac{3}{4}$	3 $\frac{5}{8}$	Do. . . .	E. L. Cappel.
16 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{5}{8}$	Do. . . .	Mr. Justice Hopley.
-16 $\frac{1}{4}$	5 $\frac{1}{2}$	2 $\frac{7}{8}$	Do. . . .	The late J. Rose.
-16 $\frac{1}{8}$	...	...	Do. . . .	J. Menges.
16	5 $\frac{3}{4}$	6	Do. . . .	Sir Edmund G. Loder, Bart.
15 $\frac{3}{4}$	6	4 $\frac{3}{4}$	Do. . . .	Rowland Ward.
-15 $\frac{3}{4}$	6	2 $\frac{3}{4}$	Do. . . .	A. E. Pease.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	3	Do. . . .	J. Kenneth Foster.
-15 $\frac{1}{2}$	5 $\frac{5}{8}$	4 $\frac{7}{8}$	Do. . . .	F. H. Barber.
15 $\frac{3}{8}$	5 $\frac{5}{8}$	4	Do. . . .	Major H. G. C. Swayne.
15 $\frac{3}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{8}$	Do. . . .	C. Liddell.
15 $\frac{3}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{4}$	Do. . . .	Lord Wolverton.
15 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do. . . .	Julius Jeppe.
15	5 $\frac{3}{8}$	6 $\frac{3}{8}$	Do. . . .	F. G. Gunnis.
15	5	4 $\frac{3}{4}$	Do. . . .	Capt. J. M'Call Maxwell.
-15	6	...	Do. . . .	Lieut.-Col. J. W. H. Flanagan.
-14 $\frac{1}{8}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$	Do. . . .	Paris Museum (H.R.H. le Duc d'Orléans).
14 $\frac{7}{8}$	5 $\frac{3}{4}$	2	Do. . . .	H. Z. Darrah.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-14 $\frac{7}{8}$	...	5 $\frac{1}{8}$	Somaliland . . .	Capt. M. M'Neill.
14 $\frac{3}{4}$	5 $\frac{1}{8}$	4 $\frac{3}{4}$	Do. . . .	Lord Delamere.
14 $\frac{11}{16}$	5 $\frac{1}{4}$	3 $\frac{11}{16}$	Do. . . .	Capt. J. J. Richardson.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	5	Do. . . .	Lieut.-Col. H. D. Olivier.
14 $\frac{1}{2}$	5	6	Do. . . .	A. E. Butter.
-14 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{1}{8}$	Do. . . .	Count Scheibler.
-14 $\frac{1}{2}$	4 $\frac{3}{4}$	4	Do. . . .	Count E. Hoyos.
-14 $\frac{1}{2}$	...	...	Do. . . .	J. Rosen.
14 $\frac{3}{8}$	5 $\frac{1}{2}$	2 $\frac{1}{2}$	Do. . . .	W. F. Whitehouse.
-14 $\frac{3}{8}$	...	5 $\frac{3}{8}$	Do. . . .	P. C. Keytel.
14 $\frac{1}{4}$	4 $\frac{1}{2}$	2	East Africa . . .	Major H. de Préé.
14	...	3	Do. . . .	Sir John Willoughby, Bart.
13 $\frac{7}{8}$	4 $\frac{5}{8}$	5 $\frac{1}{8}$	Do. . . .	H. C. V. Hunter.
13 $\frac{1}{4}$	4 $\frac{7}{8}$	4 $\frac{1}{8}$	Do. . . .	E. Lort-Phillips.



Skulls of Male and Female Beira. Shot by P. H. G. Powell-Cotton.

BEIRA (*Dorcotragus melanotis*).

In spite of its presenting a certain superficial resemblance to the members of the oribi group and its allies, this peculiar little antelope is considered to be best placed in the neighbourhood of the gazelles. From all the members of the group in which the latter are included, the beira is at once distinguished by the short and spike-like horns of the bucks. Perhaps its most striking peculiarity is the great size of its ears, which led its discoverer, Herr Menges, to describe it as a species of klipspringer. Another noticeable feature is the large size of the rounded hoofs. In colour, the upper parts and legs are pinkish fawn; a darker band defining the fawn from the white of the under parts, which (the white) is continued down the inner surfaces of the limbs as far as the knees and hocks. The head, from the ears to the nose, is bright rufous. Height at shoulder about 23 inches.

Viscount Edmond de Poncins writes that "they are good hill-climbers, and keep on rocky ground. The general shape is slender, legs are long, the head is kept erect, the ears are very big and broad, shaped like the dik-dik's, eyes big and dark, nostrils black.

"Colour a sort of grayish blue, a bit like what we call in French *gorge de pigeon*, and exactly matching the colour of the ground, so, unless they are on the move, it is difficult to distinguish them. Unlike a gazelle, its tail is generally kept down. Horns resemble those of the klipspringer,

but curve forward slightly more." From nose to root of tail $32\frac{5}{16}$, height at shoulder 21 inches, horns 4 inches; weight about 20 lbs.

Distribution.—The interior of Somaliland and the upper part of the Blue Nile. The species appears to be rare and local, going about either singly or in pairs, and inhabiting the open desert. It was first made known to science in 1894.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{8}$ ¹	$1\frac{7}{8}$	...	?	Lord Delamere.
$4\frac{3}{4}$	...	...	Northern Somaliland	J. Menges.
$4\frac{5}{8}$	2	$2\frac{7}{8}$	Abyssinia	P. H. G. Powell-Cotton.
$4\frac{1}{2}$	...	$1\frac{1}{8}$	Northern Somaliland	Capt. M. M'Neill.
$4\frac{1}{4}$	2	$2\frac{1}{2}$	Abyssinia	W. F. Whitehouse.
4	2	$2\frac{1}{16}$	French Somaliland	Viscount Edmond de Poncins.
4	$2\frac{1}{8}$	$2\frac{3}{4}$	Somaliland	Sir Edmund G. Loder, Bart.
$3\frac{7}{8}$	$1\frac{3}{4}$	$3\frac{1}{8}$	?	Lord Delamere.
$3\frac{3}{4}$	$1\frac{5}{8}$	...	French Somaliland	Viscount Edmond de Poncins.
$3\frac{1}{2}$	...	$1\frac{7}{8}$	Somaliland	A. E. Butter.
$3\frac{1}{4}$	...	$1\frac{7}{8}$	Do.	J. B. Wheelwright.

¹ Length straight $32\frac{1}{4}$ inches, along curves $35\frac{1}{4}$ inches; height at shoulder, $25\frac{1}{4}$ inches; girth, $19\frac{1}{4}$ inches; weight, 23 lbs. as he fell.



Skull of Beira, from specimen shot by P. H. G. Powell-Cotton.



Skull and Horns of Sable Antelope, from Mr. R. T. Coryndon's specimen.

SABLE ANTELOPE (*Hippotragus niger*).

Impengo of the Masubias.

Impalampala of the Swazis and
Zulus.

Ookwa of the Makubas.

Potoquane of the Southern
Bechuanas.

Pala-hala of the Swahilis.

Mperembe in the Chilala and Chibisa countries.

Pala-pala of the Makalakas.

Qualata inchu of the Bamangwatos
and Makololos.

Solupe of the Masaras.

Utjiele of the Amandebili.

Kwalata n'tso in Barotsilând.

Qualata Tshumu in Ngamiland.

The group of antelopes which includes the present species, the roan antelope, the gemsbuck, addax, etc., differs very markedly from all those before mentioned. Among the leading features are the scimitar-shaped conical or spiral horns, which are placed just over the eyes, and are present in both sexes, the hairy muzzle, the absence of face-glands, and the long, tufted tail. Even more remarkable are the upper molar teeth, which have square grinding-surfaces and tall crowns, like those of oxen.

From the other members of the group the beautiful sable antelope

and its near ally the roan antelope are well distinguished by the scimeter-shaped horns, which arise at an angle with the plane of the face, as well as by the maned neck, the tufts of long hair below the eyes, and the large size of the ears. By far the handsomer of the two is the present species, whose sable coat and great length of horn render the buck the most striking of its tribe. Other distinctive features are the continuance of the white eye-stripe to the muzzle, the length of the mane, and the relatively moderate size of the ears. Height at shoulder about $4\frac{1}{2}$ feet. A single horn in the Florence Museum measured by Mr. F. C. Selous is 61 inches on the front curve.

Distribution.—From about the centre of the Transvaal northwards to Nyasaland and the adjacent districts of South-East and East Africa. Still abundant in parts of Eastern Mashonaland, and thence towards the coast, as well as on the Batoka plateau to the north of the Zambesi. Scarcer in Central East Africa and Mozambique. The sable antelope when wounded is a dangerous antagonist, to be approached with extreme caution; it runs with considerable speed, and possesses much staying power.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
50 $\frac{7}{8}$	9 $\frac{1}{2}$	18 $\frac{1}{4}$	Barotsiland . . .	Hon. Walter Rothschild.
-50 $\frac{1}{2}$	...	...	Do. . . .	R. A. Luck.
50	...	...	Do. . . .	L. Defries.
-50	...	...	Do. . . .	J. Rosen.
48 $\frac{3}{4}$	10	23 $\frac{1}{4}$	Do. . . .	J. H. Hayes.
48 $\frac{1}{4}$	...	10 $\frac{5}{8}$	?	P. C. Keytel.
48	10 $\frac{1}{4}$	15 $\frac{3}{4}$	Matabililand . . .	Capt. J. P. Grenfell.
-48	...	...	Tanganyika . . .	E. S. Grogan.
48	...	15 $\frac{3}{4}$	Transvaal . . .	Major R. B. Fell.
-47 $\frac{7}{8}$	...	...	Rhodesia . . .	R. C. Fielding.
47 $\frac{5}{8}$	9 $\frac{3}{4}$	11	?	Capt. E. de L. Hayes.
47 $\frac{1}{4}$	9 $\frac{1}{2}$	26 $\frac{1}{2}$	?	R. T. Coryndon. (See illustration.)
47 $\frac{1}{4}$	9 $\frac{7}{8}$	23 $\frac{1}{2}$	N.W. Rhodesia . . .	Col. C. Harding.
46 $\frac{1}{2}$	9 $\frac{1}{2}$	14	Do. . . .	Sir Arthur Lawley.
-46	...	17	Barotsiland . . .	C. R. Swanson.
46	10	11 $\frac{1}{4}$	Do. . . .	T. G. Davey.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-46	...	...	Eastern Transvaal . . .	W. Russell Bowker.
46	9 $\frac{3}{4}$	16 $\frac{1}{2}$	British Central Africa . . .	Capt. R. S. Chichester.
45 $\frac{3}{4}$	10 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
45 $\frac{1}{2}$	9 $\frac{1}{4}$	15 $\frac{1}{2}$	Mashonaland	Major G. A. L. Carew.
45 $\frac{1}{2}$	10 $\frac{1}{2}$	...	Rhodesia	H. B. Marshall.
45 $\frac{3}{8}$	10	14 $\frac{3}{4}$	Lebombo Mountains . . .	F. Vaughan Kirby.
45 $\frac{1}{4}$	9 $\frac{1}{2}$	12 $\frac{1}{4}$	S.E. Mashonaland . . .	J. G. Millais.
-45 $\frac{1}{4}$	9 $\frac{1}{2}$	20 $\frac{1}{2}$	? . . . .	Mr. Justice Hopley.
-45	10 $\frac{1}{2}$	...	South Africa	Earl of Dartmouth.
44 $\frac{3}{4}$	10 $\frac{3}{8}$	13 $\frac{1}{2}$	Barotsiland	H. Timmins.
44 $\frac{3}{4}$	9 $\frac{3}{4}$	14 $\frac{1}{4}$	British East Africa . . .	Herbert Ward.
44 $\frac{1}{2}$	9	17	Transvaal	Sir J. P. Fitzpatrick.
-44 $\frac{1}{2}$	...	...	? . . . .	H. T. and A. H. Glynn.
-44 $\frac{1}{2}$	(single horn)		Batokaland	F. V. Worthington.
44 $\frac{3}{8}$	9 $\frac{1}{2}$	14	Eastern Transvaal . . .	F. Vaughan Kirby.
44 $\frac{1}{8}$	9 $\frac{1}{2}$	8 $\frac{1}{4}$	Eastern Mashonaland . .	F. C. Selous.
-44 $\frac{1}{8}$	9 $\frac{1}{2}$	14 $\frac{1}{2}$	Transvaal	Abel Chapman.
44	9	16 $\frac{1}{2}$	Lydenburg	F. H. Barber.
-44	9 $\frac{7}{8}$	9 $\frac{3}{8}$	Zambesi	Imperial Museum, Vienna.
-44	10	32 $\frac{1}{2}$	? . . . .	Berlin Museum.
44	10 $\frac{1}{4}$	15 $\frac{3}{8}$	Mashonaland	J. H. Thomas.
-44	10	16	Matabililand	F. Lean.
♀ 39 $\frac{1}{8}$	6 $\frac{1}{4}$	6 $\frac{5}{8}$	Mashonaland	F. C. Selous.
-♀ 37 $\frac{3}{8}$	...	6 $\frac{3}{8}$	? . . . .	P. C. Keytel.
♀ 36 $\frac{5}{8}$	6 $\frac{1}{2}$	...	Mashonaland	J. ff. Darling.
31	9	9	British East Africa . . .	F. J. Jackson, C.B.
-♀ 24 $\frac{1}{2}$	6	7 $\frac{3}{4}$	Do.	Major E. G. Harrison.



Head of Male Sable Antelope.

Length
on front
curve.

Circum-
ference.

Tip to
Tip.

Locality.

Owner.

Length
on front
curve.Circum-
ference.Tip to
Tip.

Locality.

Owner.



Head of Roan Antelope, from a specimen shot by Mr. F. C. Selous.

ROAN ANTELOPE (*Hippotragus equinus*).

Abu druff of the Dinkas and Arabs.

Ee-taka of the Amandebili.

Ee-pala-pala chena of the Makalakas.

Gwenki of the Hausas.

Impengo eetuba of the Masubias.

Kwar of the Masaras.

Klabakila of the Basuto.

Ipewa in the Chilala and Chibisa countries.

Mtagaisi of the Swazis and Zulus.

Oo-ka-mooh-we of the Makubas.

Qualata of the Northern Bechuanas.

Kwalata and *Etsetla* in Ngamiland.

Qualata and *Tseu* in Barotsiland.

Tai-hait-sa of the Southern Bechuanas.

Wunderbee of the Abyssinians.

In spite of its larger size (height at shoulder about 4 feet 9 inches), the shorter horns and mane, the larger ears and eye-tufts, and, above all, the grizzled roan coat, render the present species a much less striking animal than its sable cousin. A marked character of the face of the roan antelope is the cutting-off of the white eye-stripe from the muzzle by a transverse dark bar connecting the dark nose-streak with the brown of the cheeks; while the dark nose-streak itself likewise stops short of the muzzle, which is thus wholly white. Weight about 625 lbs.

Distribution.—From north of the Vaal and Orange Rivers through East and East Central Africa to the Sudan and Abyssinia, and westward to Angola, Nigeria, Gambia, and Senegambia. The name *H. equinus rufopallidus* has been applied to the East African race, while the Abyssinian form is known as *H. e. bakeri*, and the West African as

H. e. gambianus. Gordon Cumming shot the roan antelope just north of the Orange River in Griqualand West, where it has for many years been exterminated. Nowhere abundant, the species is most plentiful in Mashonaland and neighbouring districts; in the Transvaal it is only sparsely distributed. South of the Orange River this group of antelopes was formerly represented by the much smaller blaauwbok, or blue antelope (*H. leucophæus*), long since exterminated.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{4}$	10	7 $\frac{1}{4}$	White Nile . .	P. Niedieck.
-35	9 $\frac{1}{2}$	8 $\frac{1}{2}$	South Africa . .	A. Ohlsson.
34 $\frac{1}{4}$	9	7	Okavango Valley .	Sir H. J. Goold-Adams.
33	8 $\frac{3}{4}$	10	White Nile . .	S. H. Whitbread.
33	...	...	Northern Matabililand	A. C. Fountaine.
32 $\frac{3}{8}$	8 $\frac{5}{8}$	9 $\frac{1}{2}$	Mashonaland . .	Julius Jeppe.
32 $\frac{1}{2}$	9	...	White Nile . .	R. McD. Hawker.
32 $\frac{1}{4}$	10	8 $\frac{3}{4}$	Do. . .	G. H. Cheetham.
-32 $\frac{1}{4}$	9 $\frac{7}{8}$	13 $\frac{3}{8}$	Do. . .	British Museum (Sir W. Garstin).
-32 $\frac{1}{4}$	8 $\frac{3}{4}$	6 $\frac{1}{4}$	? . .	P. C. Keytel.
32	9 $\frac{5}{8}$	5 $\frac{3}{4}$	White Nile . .	C. Adeane.
32	9 $\frac{1}{2}$	12	Hanyani Valley . .	F. C. Selous.
-32	...	14 $\frac{1}{4}$	? . .	E. N. Buxton.
-32	10	13 $\frac{3}{8}$	Mashonaland . .	Major A. St. H. Gibbons.
31 $\frac{3}{4}$	9 $\frac{1}{2}$	5 $\frac{1}{2}$	South Africa . .	Sir Edmund G. Loder, Bart.
31 $\frac{1}{2}$	9 $\frac{1}{2}$	11 $\frac{7}{8}$	Mashonaland . .	F. C. Selous.
-31 $\frac{1}{2}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	Nyasaland . .	Major P. W. Forbes.
-31 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$	Angola . .	E. P. Cooper.
31	9 $\frac{1}{2}$	10 $\frac{1}{2}$	White Nile . .	Major Hon. W. Guinness.
31	8 $\frac{3}{4}$	13	Mashonaland . .	J. A. Jameson.
-31	10	6 $\frac{3}{4}$	? . .	Mr. Justice Hopley.
-30 $\frac{3}{4}$	10	14 $\frac{3}{8}$	Sudan . .	Count T. Palffy.
♀ 30 $\frac{1}{2}$	7	7 $\frac{3}{8}$	Mashonaland . .	F. C. Selous.
30 $\frac{1}{2}$	9 $\frac{1}{2}$	17	Sudan . .	Col. B. T. Mahon.

ROAN ANTELOPE

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Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-30½	9½	20	Sudan . . .	Prince Henry of Liechtenstein.
30½	9	13½	South Africa . .	G. Richards.
-30½	10	11½	Portuguese East Africa	F. Vaughan Kirby.
-30½	8½	9	Matabililand . .	Count E. Hoyos.
-30½	...	...	?	O. R. Dunell.
30½	9½	13	British Central Africa .	J. E. S. Old.
♀ 30	7	17½	White Nile . . .	W. D. James.
30	9	10¾	Niger . . .	Brig.-Gen. Sir James Willcocks.
-30	9½	10	Matabililand . .	Capt. W. Jardine.
29½	10½	14½	Do. . .	W. Van Ness.
29½	9½	11½	Mashonaland . .	Hon. Walter Rothschild.
29¾	9½	12	Do. . .	Dudley West.
29½	10	10¾	White Nile . . .	Major R. M. Sanders.
29½	9½	17½	Sudan . . .	Lieut.-Col. A. Colville.
♀ 29½	7	6½	B.C.A. . . .	R. H. Storey.
29½	9½	4	Bahr-el-Salam, Sudan .	Lieut.-Col. Hon. W. Coke.
29½	10	5½	Barotsiland . .	F. V. Worthington.
29½	9½	15½	White Nile . . .	H. F. Buxton.
29	8¾	13½	Sudan . . .	Count J. Potocki.
29	8½	10	N.W. Rhodesia . .	Col. C. Harding.
29	9¾	12½	White Nile . . .	H. Cookson.
-28¾	8½	12½	Gambia . . .	Dr. Percy Rendall.
♀ 28¾	6½	2¾	Niger . . .	Capt. G. H. F. Abadie.
28½	9½	9½	Do. . . .	Capt. J. K. Cochrane.
28½	8½	14	White Nile . . .	Count C. Hoyos.
28	8¾	9¾	Niger . . .	Dr. F. W. Chesnaye.
27¾	9½	15	Abyssinian Sudan . .	Prince Colloredo Mannsfeld.
27¾	9	14½	Niger . . .	Capt. H. A. Porter.
26½	9½	6½	Abyssinia . . .	P. H. G. Powell-Cotton.
♀ 26½	6½	10½	B.C.A. . . .	Capt. F. D. Markham.
♀ 25½	6½	14¾	Sudan . . .	Col. B. T. Mahon.
-♀ 21½	6½	9½	German East Africa .	O. Neumann.
18	8½	10	N. of Machakos, B.E.A.	E. G. Mardon.



Skull and Horns of Gemsbuck, from Mr. F. H. Barber's specimen.

GEMSBUCK ORYX (*Oryx gazella*).

The long, straight, spear-like horns, of which even the lion fights shy, render the gemsbuck and its more immediate allies an easily recognised sub-group. And even when, as in the white oryx, the horns are scimeter-shaped, they differ from those of the sable antelope by starting in the plane of the face. It is also a noteworthy fact that in

the present species the horns of the females are longer and finer, and therefore more prized, than those of the bulls. An adult gemsbuck stands about 3 feet 9 inches at the shoulder. In addition to the length of its horns, the species is sufficiently characterised by the presence of a tuft of hair on the throat, and the cutting-off of the white eye-stripe from the muzzle by the union of the dark central nose-streak with the black of the cheeks.

Distribution.—The desert regions of South-Western Africa, from the northern Karoos of Cape Colony through the Kalahari and Damaraland to Southern Angola, in Mossamedes, and perhaps Benguela. North of the Chobi and eastwards of Khama's country the species appears to be unknown. So late as 1846 Gordon Cumming found gemsbuck abundant on the northern Karoos of Cape Colony; and even now a few linger on the plains to the south of the lower reaches of the Orange River. In the northern Kalahari, where they exist for months without water, they are still abundant. The splendid horns of the gemsbuck are always regarded as prime trophies of the hunter's skill; the finding, riding-down, and shooting of one of these wary and enduring desert-bred antelopes being a feat of which any man, however well mounted, may be deservedly proud.

Length on front.	Circum- ference.	Tip to Tip.	Locality.	Owner.
47½	6¾	17½	South Africa . . .	The late J. S. Jameson.
-♀ 45½	...	...	Bechuanaland . . .	F. H. Barber. (See illustration.)
♀ 45¼	6¼	33¾	Ngamiland . . .	Sir H. J. Goold-Adams.
45	8½	18½	Do. . . .	Hon. Walter Rothschild.
45	7	26	Do. . . .	R. H. Venables Kyrke.
-44½	...	...	South Africa . . .	Dr. A. Schopf.
-44½	6½	25	? . . .	P. C. Keytel.
-44	6½	17	? . . .	A. Ohlsson.
-43¾	7	21	? . . .	Dr. W. P. Y. Bainbrigge.
43¾	6¾	18½	Nata River . . .	F. C. Selous.
43¼	6¾	20¾	? . . .	Sir Victor Brooke's Collection.
-43¼	8	16	? . . .	James J. Harrison.
43¾	6¾	22	Botletli River . . .	F. C. Selous.
-43	...	...	South Africa . . .	J. Rosen.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-43	7 $\frac{1}{2}$	...	?	Earl of Dartmouth.
43	6 $\frac{1}{2}$	22	?	W. Y. Campbell.
-42 $\frac{3}{4}$	...	22 $\frac{1}{4}$	?	J. L. Drège.
42 $\frac{1}{2}$	7	20 $\frac{1}{2}$	Bechuanaland . . .	A. Neilson.
-♀ 42 $\frac{1}{2}$	...	...	?	W. J. Corder.
42 $\frac{3}{8}$	6 $\frac{1}{2}$	19 $\frac{1}{2}$	Bechuanaland . . .	Capt. F. H. Lehmann.
42	7 $\frac{1}{2}$	16	?	Capt. the Hon. A. Stourton.
-42	6 $\frac{5}{8}$	22	?	Julius Jeppe.
42	6 $\frac{5}{8}$	20 $\frac{3}{4}$	?	A. Ryley.
41 $\frac{1}{2}$	7	21 $\frac{1}{4}$	?	Dr. S. Martin.
41 $\frac{1}{2}$	7 $\frac{1}{2}$	18 $\frac{1}{2}$	?	R. T. Coryndon.
-41 $\frac{7}{10}$	8	15 $\frac{5}{8}$	Great Namaqualand . .	Th. Rehbock.
♀ 41 $\frac{1}{4}$	6 $\frac{1}{2}$	22 $\frac{3}{4}$	?	Mr. Justice Hopley.
♀ 41 $\frac{5}{8}$	5 $\frac{1}{8}$	29 $\frac{7}{8}$	Great Namaqualand . .	Th. Rehbock.
♀ 41	7	19	?	Major R. Hayes-Sadler.



Head of Beisa Oryx.

BEISA ORYX (*Oryx beisa*).

Beida of the Somalis. *Sala* of the Abyssinians of Danakil.

The beisa may be regarded as the north-eastern representative of the gemsbuck, from which it may be distinguished at a glance not only by the absence of a tuft of hair on the throat, but also by the separation of the black nose-stripe from the eye-stripes. There is also no black on the haunches or thighs, and the horns are considerably shorter and less divergent. Height at shoulder reaching to about 4 feet. Weight 458 lbs.

Distribution.—North-East Africa, from Suakin through Abyssinia to Berbera in Somaliland, and south to Tana River.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40	...	...	?	Measured by A. O. Hume, at Aden.
♀ 39	5½	8	Hargeisa, Somaliland.	E. P. Hare.
- ♀ 37½	...	9	?	P. C. Keytel.
37½	7	11½	Somaliland . .	G. D. E. Chapman.
36½	7½	12½	Lake Rudolf . .	A. E. Butter.
- ♀ 36½	...	...	Northern Somaliland .	J. Menges.
36½	6	10	East Africa . .	Rhys Williams.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 36 $\frac{1}{4}$	6 $\frac{1}{4}$	9	Somaliland . . .	H. Z. Darrah.
36	7	6 $\frac{1}{4}$	Do.	G. D. E. Chapman.
36	6 $\frac{3}{4}$	7 $\frac{3}{4}$	East of Lake Rudolf .	A. H. Neumann.
36	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Somaliland . . .	Capt. J. T. Brinkley.
36	6	8 $\frac{1}{2}$	Do.	Count J. Potocki.
- ♀ 36	...	...	Do.	Dr. Donaldson Smith.
35 $\frac{3}{4}$	6 $\frac{3}{4}$	9 $\frac{1}{8}$	Do.	Lord Delamere.
♀ 35 $\frac{3}{4}$	5 $\frac{3}{4}$	8	Do.	R. Wahrmann.
♀ 35 $\frac{1}{2}$	6	11	East Africa . . .	W. F. Whitehouse.
35 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	Somaliland . . .	Prince Nicolas Ghika.
- ♀ 35 $\frac{1}{2}$	5 $\frac{7}{8}$	9 $\frac{1}{8}$	East Afrca . . .	Rhys Williams.
♀ 35 $\frac{1}{4}$	6	10 $\frac{1}{2}$	East of Lake Rudolf .	A. H. Neumann.
35 $\frac{1}{4}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	Do.	H. Z. Darrah.
35	6	7 $\frac{1}{4}$	? . . . .	W. N. M'Millan.
35	6	9	Somaliland . . .	Major-Gen. A. Paget.
♀ 35	5 $\frac{1}{2}$	7 $\frac{3}{4}$	Danakil . . .	Viscount Edmond de Poncins.
35	5 $\frac{3}{4}$	7 $\frac{5}{8}$	Somaliland . . .	A. S. Trevor.
♀ 34 $\frac{3}{4}$	4 $\frac{3}{4}$	13 $\frac{1}{2}$	Abyssinia . . .	P. H. G. Powell-Cotton.
♀ 34 $\frac{3}{4}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$	Somaliland . . .	G. M. Norrie.
34 $\frac{3}{4}$	6 $\frac{1}{2}$	8	Tana River . . .	Capt. C. Hankey.
♀ 34 $\frac{1}{2}$	6	10 $\frac{1}{2}$	Somaliland . . .	Major J. M'Call Maxwell.
34 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Do.	Alex. R. Alston.
34 $\frac{1}{2}$	7	6	Do.	F. G. Barclay.
♀ 34 $\frac{1}{2}$	5 $\frac{3}{4}$	8 $\frac{3}{4}$	Do.	R. McD. Hawker.
♀ 34 $\frac{1}{2}$	5 $\frac{1}{8}$	13	Do.	T. W. H. Clarke.
34 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Do.	E. Lee Townshend.
34 $\frac{1}{2}$	5 $\frac{1}{4}$	8	Do.	Sir H. D. Tichborne, Bart.
-34 $\frac{3}{8}$	6	10 $\frac{3}{4}$	Do.	Count Scheibler.
-34 $\frac{1}{4}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	S.E. Somaliland .	S. Payne-Gallwey.



Head of Fringe-eared Beisa.

FRINGE-EARED BEISA (*Oryx beisa callotis*).

Distinguished from the ordinary beisa by the fringe of long hairs surmounting the ears, by the extension of the eye-stripe to the lower jaw, along which it runs to join the throat-stripe, by the absence of any black on the front of the legs below the knees, and by the rich fawn of the ground-colour of the upper part of the face. Height at shoulder, 48 inches.

Distribution.—East Africa, south of Tana River. Although generally considered a distinct species, it seems better to regard this animal as a well-marked local race of the ordinary beisa. It is generally found in bush-covered country, either singly or in small herds, and is of a remarkably shy disposition. The Swahili name is cheroa.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
33½	7	13	Athi River . . .	R. B. P. Cator.
31½	...	12	Makindu . . .	Capt. M. M'Neill.
31	6	10	Do. . . .	W. M. Greiss.
30½	5¾	10½	East Africa . . .	F. J. Jackson, C.B.
30¼	...	6	Sabaki River District .	Capt. T. W. Greenfield.
30	...	10	East Africa . . .	Sir John Willoughby, Bart.
29⅝	6½	8	Do. . . .	Major W. Anstruther Thomson.
29½	5½	7¾	Do. . . .	Sir Robert Harvey, Bart.
29	6	6½	Masailand . . .	Lieut.-Col. Hon. W. Coke.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29	5 $\frac{1}{4}$	11 $\frac{1}{2}$	Masailand . . .	Sir Edmund G. Loder, Bart.
-29	...	12 $\frac{3}{4}$	?	Major E. G. Harrison.
28 $\frac{3}{4}$	5 $\frac{1}{8}$	6	Masailand . . .	H. C. V. Hunter.
♀ 28 $\frac{5}{8}$	4 $\frac{3}{4}$	12 $\frac{1}{4}$	Do. . . .	Henry Charrington.
27 $\frac{1}{8}$	6 $\frac{7}{8}$	10 $\frac{1}{2}$	Do. . . .	C. Craig.
27	6	9	Do. . . .	E. Gedge.
26 $\frac{3}{4}$	6	13 $\frac{1}{2}$	Do. . . .	F. W. Belt.

BEATRIX ORYX (*Oryx beatrix*).

This oryx is a much smaller animal than the beisa, measuring about 2 feet 8 inches at the shoulder, and is of a whitish colour, with a dark spot on the face, and a large dark patch on each cheek, which meets its fellow beneath the throat; the knees and the front of the lower portion of the legs being blackish brown, and the tail-tuft black.

Distribution.—The interior of Arabia, especially the Nejd district and the confines of the great desert east of Oman.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-26 $\frac{1}{8}$	4 $\frac{3}{4}$	10 $\frac{1}{4}$	Arabia	Paris Museum.
23 $\frac{3}{4}$	5	9 $\frac{1}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
♀ 15	3 $\frac{3}{8}$	4 $\frac{1}{2}$	Head of Persian Gulf .	British Museum (B. T. Finch).



Head of White Oryx.

WHITE ORYX (*Oryx leucoryx*).

A very distinct species of the genus, agreeing approximately in size with the beisa, but with long recurving scimitar-shaped horns and a generally whitish coloration, showing a more or less distinct chestnut tinge. The chestnut shows itself chiefly on the neck, shoulders, under-parts, and upper portions of the limbs; but in addition to this there are six brownish patches or streaks on the face, two of which are situated in the middle line, while two form eye-stripes, the other pair being between the horns and the eyes.

Distribution.—North-Western Central Africa, from Sennar and Kordofan to parts of Nubia, the Sudan, and Palestine. Rare in collections and menageries.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ 42	5	...	Nigeria . . .	Capt. W. D. Wright.
¹ 41 $\frac{7}{8}$	6 $\frac{1}{2}$	...	Lake Chad . . .	E. B. Macnaughten.
39 $\frac{3}{4}$	5 $\frac{1}{2}$	14 $\frac{1}{2}$	N.W. Kordofan . . .	Prince Henry of Leichtenstein.
39 $\frac{3}{4}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	Do. . .	British Museum (Capt. H. N. Dunn).
39 $\frac{1}{4}$	5 $\frac{3}{4}$	11 $\frac{3}{4}$	Do. . .	Col. B. T. Mahon.
¹ 39	5 $\frac{1}{2}$	...	N. of Sokoto . . .	Lieut.-Col. P. S. Wilkinson.
38 $\frac{1}{4}$	5 $\frac{1}{2}$	11	El Obeid . . .	Capt. J. G. A. Massy.
37	5 $\frac{1}{4}$	9 $\frac{3}{4}$	Kordofan . . .	Capt. R. A. Markham.

¹ Single horn.



Skull and Horns of Addax presented to the British Museum by Mr. J. I. S. Whitaker.

ADDAX (*Addax nasomaculatus*).

This antelope is another member of the oryx group, but is referred to a genus apart, of which it is the sole representative. Its most distinctive features are the spirally twisted and closely ringed horns (which recall those of the Indian blackbuck), and the heavy mass of long hair clothing the neck and shoulders and forming a forelock on the forehead. The general colour is yellowish white in summer and grayish in winter, but the head, neck, and mane are brown, although a streak across the face below the eyes, the lips, and a spot on the outer surface of each ear are white. Hoofs very wide and shallow, almost like those of the reindeer. Height at shoulder about 3 feet 6 inches.

Distribution.—North Africa and Arabia.

Length. On front curve.	Straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
39 $\frac{5}{16}$	34 $\frac{1}{2}$	5 $\frac{7}{8}$	18 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
39	33	6	20 $\frac{1}{2}$	?	Carl Hagenbeck.
38 $\frac{1}{2}$	30 $\frac{1}{2}$	6 $\frac{1}{2}$	12 $\frac{1}{2}$	South Tunisia .	British Museum (J. I. S. Whitaker). (See illustration.)
37 $\frac{3}{4}$	31 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	Sahara . . .	W. Barry.
36 $\frac{1}{2}$	31 $\frac{1}{2}$	6	19 $\frac{3}{4}$	South Tunisia .	F. H. Barber.
35 $\frac{3}{4}$	28	6 $\frac{3}{8}$	13 $\frac{1}{8}$	North Africa . .	Hon. Walter Rothschild.
35	29	6 $\frac{1}{2}$	14	Do. . .	W. Barry.
♀ 34 $\frac{3}{4}$	28	4 $\frac{3}{4}$	7 $\frac{1}{2}$	Sahara . . .	Hon. Walter Rothschild.
-34 $\frac{1}{4}$	27 $\frac{3}{4}$	6 $\frac{1}{2}$	17	South Tunisia .	A. E. Pease.
34	29 $\frac{1}{2}$	5 $\frac{3}{4}$	14 $\frac{3}{4}$	Do. . .	Mr. Justice Hopley.
34	29	6 $\frac{3}{8}$	10 $\frac{1}{4}$	Do. . .	Julius Jeppe.
33 $\frac{1}{2}$	26	5 $\frac{1}{2}$	12 $\frac{1}{4}$	Do. . .	Hon. R. A. Ward.
-32 $\frac{1}{2}$	...	...	19 $\frac{1}{4}$	Do. . .	P. C. Keytel.
-32	...	6	15 $\frac{1}{2}$	Do. . .	Major W. Anstruther Thomson.
♀ 32 $\frac{3}{8}$	28	4 $\frac{3}{4}$	14 $\frac{1}{4}$	Do. . .	Mr. Justice Hopley.
♀ 32	26 $\frac{1}{2}$	5	12 $\frac{3}{4}$	Do. . .	Julius Jeppe.
31	25 $\frac{1}{2}$	5 $\frac{1}{4}$	13	Do. . .	J. H. Thomas.
♀ 30 $\frac{3}{8}$	27 $\frac{1}{4}$	4 $\frac{3}{4}$	17 $\frac{1}{4}$	South Algeria .	Hon. Walter Rothschild.
-♀ 30 $\frac{1}{2}$	27 $\frac{1}{2}$	...	...	South Tunisia .	Sir H. H. Johnston.
♀ 29	25 $\frac{1}{2}$	4 $\frac{1}{4}$	13	South Algeria .	F. H. Barber.



Head of Male Nilgai.

NILGAI (*Boselaphus tragocamelus*).

This somewhat ungainly and decidedly small-horned antelope is the single Oriental representative of an important group whose other members are African. Most are large, and, with the exception of the elands and bongo, lack horns in the females. In the males the horns are angulated in front and generally spirally twisted, but in no case ridged. There are small face-glands, the muzzle is naked, and the tail is long and tufted. Except in the nilgai, the upper cheek-teeth have short and broad crowns.

From the other members of the group the nilgai is readily distinguished by its short, upright horns, which, although angulated in front, show no distinct spiral twist. With a long and pointed head, this antelope has the fore-legs considerably longer than the hind pair; and it is chiefly to this peculiarity that its ungainly appearance is due. Both sexes have a mane on the neck, but the bulls alone possess a tuft of long hair on the middle of the throat. The general colour of the adult bull is dark gray, tinged with blue or brown; but the mane and tufts of long hair are black, and streaks and patches on the face, ears, and throat, as well as the under-parts, the lower surface

of the tail, a streak down the buttocks, and a ring above and below each fetlock, are white. Height at shoulder from 4 feet 4 inches to 4 feet 8 inches. Mr. A. O. Hume shot a specimen in the Aligurh district in 1855 whose horns measured $11\frac{3}{4}$ along the front curve, and had a circumference of 9.5. They were unfortunately destroyed in the Mutiny.

Distribution.—The peninsula of India, from the foot of the Himalaya to the south of Mysore; common in parts of the Eastern Punjab, the North-West Provinces, Guzerat, and the Central Provinces.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$9\frac{7}{8}$	$7\frac{3}{4}$	$5\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
$9\frac{1}{2}$	$6\frac{1}{2}$	6	?	Major G. F. Mockler.
$9\frac{1}{2}$	$7\frac{1}{2}$	$6\frac{1}{4}$	?	J. Whitaker.
$-9\frac{1}{2}$	$8\frac{1}{2}$	...	Bhurtpur . .	Capt. E. R. Gordon.
$9\frac{1}{4}$	$6\frac{3}{4}$	$4\frac{7}{8}$	?	British Museum.
9	$6\frac{5}{8}$	$3\frac{1}{2}$	?	A. O. Hume.
$8\frac{7}{8}$	$6\frac{1}{2}$	$5\frac{1}{4}$	Central Provinces .	C. D. Twopeny.
$8\frac{3}{4}$	$6\frac{1}{4}$	$5\frac{3}{4}$	Bhurtpur . .	Lieut.-Col. J. M. Fawcett.
$-8\frac{3}{4}$	...	...	Jumna Valley . .	Indian Museum.
$8\frac{1}{2}$	$7\frac{1}{2}$	$4\frac{3}{4}$	Central Provinces .	Capt. E. H. R. Hibbert.
$8\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{4}$	Do. . .	The late Marquis of Dufferin and Ava.
$-8\frac{1}{2}$	$6\frac{1}{2}$	6	Do. . .	Dublin Museum.
$-8\frac{1}{2}$	6	$5\frac{1}{2}$	Do. . .	Count J. Potocki.
$8\frac{1}{4}$	$7\frac{1}{8}$	$7\frac{3}{4}$	North India . .	Sir Victor Brooke's Collection.
-8.25	7.80	6.70	Ulwar . . .	Viscount Edmond de Poncins.
$8\frac{1}{4}$	...	...	Kathiawar . .	Lieut.-Col. L. L. Fenton.
$-8\frac{1}{4}$	...	...	Kota . . .	H.H. the Maharaja of Bikanir.
$8\frac{1}{8}$	$6\frac{1}{8}$	5	?	British Museum (Hume Collection).
8	$6\frac{3}{4}$	$6\frac{1}{4}$	Nimar, Cent. Prov. .	Lieut.-Col. H. Wade-Dalton.
8	$6\frac{1}{2}$	$7\frac{1}{4}$	?	P. Niedieck.
8	$6\frac{1}{2}$	5	Terai . . .	Capt. E. B. Cook.



Head of Lesser Bushbuck shot by Mr. A. M. Naylor.

LESSER BUSHBUCK (*Tragelaphus scriptus*).

Assali, Danakil name.

Chiwalawala in the Chilala and Chibisa countries.

Boschbok of the Dutch.

Ibawara of the Lower Zambesi natives.

Imbabala of the Swazis and Matonga.

Inkonka (male), *Imbabala* (female) of the Zulus.

M'babala in Barotsiland.

M'babala and *Serolo buchuhu* in Ngamiland.

Mbawara of the Swahilis.

Mazo and *Bülümngito* of the Hausas.

Scrolobutuku of the Bamangwatos.

Ungurungu of the Makubas.

The bushbucks, or harnessed antelopes, form an extensive group of species nearly allied to the kudus, but usually displaying great sexual differences in the colour of the coat, and generally having a simpler spiral to the horns. The females are nearly always striped with white on a chestnut ground, but the bucks may be darker and more uniformly coloured. As in the kudus, the females are hornless. The lesser bushbuck is the smallest and at the same time the most widely spread member of the group, having several local races. The height at the shoulder ranges from $2\frac{1}{2}$ to 3 feet, and the weight from 100 lbs. to

170 lbs. In the Abyssinian race (*T. scriptus decula*), which ranges into the dense forests bordering the Webbe River in Somaliland, and is locally known as *dol*, the build is low and stout, and the general colour yellowish, the light stripes being nearly obsolete. In the West African race (*T. scriptus typicus*), from West, Central, and South-Central Africa, the ground-colour is bright rufous, and the spots and stripes are very conspicuous. On the other hand, in the East African race (*T. scriptus roualeyni*) the bucks are dark brown, with only faint indications of white markings. Finally, in the Cape form (*T. scriptus sylvaticus*) the colour is dark brown without transverse white stripes, and the spots reduced to a few indistinct ones on the haunches.

In the southern districts of Cape Colony bushbuck are still to be found in abundance, even in the neighbourhood of large towns like Port Elizabeth. Recourse is, however, had to preserving for the greater part of the year, by which means the well-known Easter Hunts, when driving is practised and large bags are made, are still kept up. In more inland districts either the does or both sexes are periodically protected. A wounded bushbuck will often make a desperate and dangerous charge.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-19 $\frac{7}{8}$	5 $\frac{3}{4}$	11	Lower Zambesia . . .	Surgeon W. H. S. Stalkartt, R.N.
19	5 $\frac{5}{8}$	3 $\frac{3}{4}$	B.C.A. . . .	J. E. S. Old.
-18	6 $\frac{1}{2}$	7 $\frac{1}{4}$	West Africa . . .	P. C. Keytel.
18 $\frac{1}{2}$	6	8 $\frac{5}{8}$	Pungwe	P. H. Illingworth.
-18 $\frac{1}{2}$	...	...	British Central Africa . .	G. Le H. K. Bainbridge-Ritchie.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$	East Africa	Julius Jeppe.
17 $\frac{7}{8}$	6 $\frac{1}{4}$	5 $\frac{7}{8}$	Do.	Sir John Kirk.
17 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Zululand	Julius Jeppe.
-17 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{5}{8}$	Mount Zomba, B.C.A. . .	D. MacAlpine.
-17 $\frac{1}{2}$	6 $\frac{1}{4}$	5 $\frac{1}{4}$	East Africa	P. C. Keytel.
-17 $\frac{1}{2}$	5 $\frac{1}{2}$	10 $\frac{3}{4}$	Limpopo River	Grahamstown Museum.
-17 $\frac{1}{2}$	5 $\frac{3}{4}$	10 $\frac{5}{8}$	?	Major W. Anstruther Thomson.
17 $\frac{1}{4}$	6	5 $\frac{1}{4}$	N.E. Gazaland	A. M. Naylor. (See illustration.)
17 $\frac{1}{4}$	7	7 $\frac{3}{8}$	Near Port Shepstone . .	E. H. E. Abadie.
-17 $\frac{1}{4}$	...	...	?	A. Griffiths.
-17 $\frac{1}{8}$	...	10 $\frac{3}{8}$	Mashonaland	J. ff. Darling.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
17	5½	8½	Mount Zomba, B.C.A.	C. C. Bowring.
-16¾	...	...	?	W. J. Corder.
-16¾	...	...	East Africa	Capt. M. McNeill.
16⅝	5⅞	6¼	Manda Island, B.E.A.	British Museum.
16½	5¾	7⅞	B.C.A.	R. H. Storey.
16½	5¾	(one horn)	Pungwe	Col. G. A. Percy.
16½	6	7	?	Sir Edmund G. Loder, Bart.
16½	7	7	East Africa	Sheffield Neave.
16½	6	7¾	Do.	F. W. Belt.
-16½	6½	7½	Natal	General A. W. Drayson.
16½	6¼	8	?	Capt. H. B. Dalgety.
-16½	...	...	?	O. R. Dunell.
16¼	6	7	S. of Albert Edward Nyanza	A. H. Sharp.
16¼	5⅞	7¾	Pungwe	Major G. T. M. Bridges.
16	6	3½	East Africa	T. P. A. Holford.
16	6¼	7¼	Pungwe	Capt. Sir K. Fraser, Bart.
-16	6½	...	Kalamba Hills	F. Vaughan Kirby.
15¾	6	5⅞	Okavango River	Sir H. J. Goold-Adams.
15¾	6	8⅞	Zululand	A. H. Neumann.
15¾	5	3¾	Do.	Major L. O. Williams.
-15¾	...	...	South Africa	F. H. Barber.
15⅞	5½	3	British East Africa	G. E. Smith.
15⅞	5¼	5	Pungwe	Hon. T. Thynne.
15½	5½	3⅞	Transvaal	C. F. Eustace.
15½	5⅞	4½	South Africa	F. C. Selous.
-15½	...	...	Do.	H. T. and A. H. Glynn.
15½	5¾	8	Do.	R. C. Batley.
15⅞	6⅞	7½	Do.	Major-General Sir Arthur Ellis, K.C.V.O.
15⅞	5½	7½	Zululand	Hon. Charles Ellis.
15¼	6	6¾	Pungwe	H. R. Holden.
-15¼	7¼	6½	Nyasaland	Alex. R. Alston.

LESSER BUSHBUCK

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Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15 $\frac{1}{8}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$?	Mr. Justice Hopley.
15	5 $\frac{1}{2}$	4 $\frac{1}{4}$	East Africa . . .	J. H. Whitehouse.
14	5 $\frac{1}{2}$	7 $\frac{1}{4}$	Wadelai . . .	Major M. L. Carleton.
13	5 $\frac{1}{2}$	7	Benguela . . .	G. W. Penrice.
12 $\frac{3}{4}$	5 $\frac{1}{2}$	3 $\frac{1}{4}$	White Nile . . .	E. C. Crispin.
12 $\frac{1}{2}$	5	5 $\frac{1}{4}$	S. of Abukutu . . .	Major R. M. Sanders.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	2 $\frac{3}{8}$	Sudan . . .	Prince Colloredo Mannsfeld.
12 $\frac{1}{4}$	5	5	Nigeria . . .	Major J. A. Burdon.
12 $\frac{1}{4}$	4 $\frac{5}{8}$	5	White Nile . . .	Lieut.-Col. E. G. T. Bainbridge.
11 $\frac{1}{4}$	5	4 $\frac{3}{4}$	Nigeria . . .	N. F. Baynes.
10 $\frac{3}{4}$	4 $\frac{1}{2}$	5	Do. . .	Lieut.-Col. A. J. Arnold.
-10 $\frac{1}{2}$	...	4	Near Lado . . .	Sir W. Garstin.
10 $\frac{1}{2}$	4 $\frac{1}{2}$	2 $\frac{1}{4}$	Gambia . . .	British Museum (late Earl of Derby).
10 $\frac{1}{4}$	5	5 $\frac{1}{4}$	Nigeria . . .	Capt. G. H. F. Abadie.
9 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Do. . .	Capt. B. R. M. Glossop.



Head of Abyssinian race of Lesser Bushbuck shot in the Webbe Shebayle District, Somaliland,
by Major H. G. C. Swayne.

Dol of the Somalis.*Dūcūlar* of the Abyssinians.

The following specimens belong to the Abyssinian race (*T. scriptus decula*); the body measurements being those of one shot by Viscount Edmond de Poncins on the Hawash River, 1898:—

From nose to root of tail	. 48 $\frac{3}{8}$ ins.
Height at withers	. 26 $\frac{3}{4}$ „

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-17	...	...	Somaliland . . .	Major H. G. C. Swayne.
-16 $\frac{1}{2}$	6 $\frac{1}{4}$	5	Do. . . .	A. H. Straker.
-13 $\frac{3}{4}$	5 $\frac{1}{2}$	5 $\frac{1}{4}$	Harar, Abyssinia . .	Prince de Lucinge.
-12 $\frac{7}{8}$	5 $\frac{1}{4}$	3 $\frac{1}{4}$	Near Hawash River, Abyssinia	Viscount Edmond de Poncins.
12 $\frac{5}{8}$	5	5 $\frac{1}{4}$	Abyssinia	W. D. James.
12	5 $\frac{1}{8}$	5 $\frac{1}{8}$	Do. . . .	British Museum.
11 $\frac{3}{4}$	6	5 $\frac{1}{2}$	Do. . . .	A. E. Butter.
11	5 $\frac{1}{8}$	5	Settite River, Abyssinia .	Col. Ralph Vivian.
11	4 $\frac{3}{8}$	2 $\frac{5}{8}$	Northern Abyssinia . .	British Museum.



Horns of Nyala, from a specimen in the possession of Mr. F. H. Barber.

NYALA (*Tragelaphus angasi*).

This representative of the harnessed antelopes is a large but delicately built species, standing about 3 feet 6 inches at the shoulder. Weight about 250 lbs. to 300 lbs. In both sexes the hair is very long and coarse, but in the male the colour is dark grayish brown with a small number of indistinct white stripes, while in the female it is bright reddish chestnut with clearly defined stripes. The males have a fringe of long hair on the neck and the under-parts of the body, their horns being much rougher than those of the bongo. As in the latter, the hoofs are short.

Distribution.—South-East Africa, including Zululand, Delagoa Bay, and Nyasaland; on the West Coast it has been reported from Angola, although this form may indicate a distinct local race.

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
31 $\frac{1}{8}$	24 $\frac{1}{2}$	8 $\frac{1}{4}$	3 $\frac{1}{2}$	Shiré River, B.C.A.	Fergus Maclagan.
29 $\frac{3}{4}$	24	...	11 $\frac{1}{2}$	?	F. J. Newnham.

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
29 $\frac{3}{4}$	25	7 $\frac{7}{8}$	14 $\frac{1}{2}$	Zululand . . .	Lieut.-Col. D. Bruce.
-29 $\frac{1}{4}$	...	...	...	Delagoa Bay . . .	F. H. Barber. (See illustration.)
-29 $\frac{1}{8}$	...	...	...	?	O. R. Dunell.
28 $\frac{1}{2}$	23 $\frac{3}{4}$	8	12 $\frac{3}{4}$	Zululand . . .	Hon. Walter Rothschild.
-28 $\frac{1}{2}$	...	...	...	?	W. Russell Bowker.
28 $\frac{1}{4}$	21 $\frac{1}{4}$	7 $\frac{1}{4}$	9 $\frac{3}{4}$	Delagoa Bay . . .	R. T. Coryndon.
-28 $\frac{1}{4}$	...	...	6 $\frac{1}{4}$	Do. . . .	P. C. Keytel.
28	24	8	15	Katanga, B.C.A. . .	John Yule.
28	23	7 $\frac{1}{4}$	13 $\frac{1}{4}$	Near Chiromo, B.C.A. . .	Staff-Surgeon J. Dowson, R.N.
28	...	8 $\frac{1}{8}$	10 $\frac{1}{8}$	South Africa . . .	British Museum.
28	23 $\frac{1}{4}$	7 $\frac{1}{4}$	8 $\frac{3}{4}$	Delagoa Bay . . .	Dudley West.
-28	...	...	...	?	Major W. Anstruther Thomson.
-28	23 $\frac{3}{4}$	8	11	?	Dr. W. P. Y. Bainbrigge.
27 $\frac{5}{8}$	22 $\frac{1}{2}$	7 $\frac{7}{8}$	9 $\frac{1}{2}$	South Africa . . .	Sir Victor Brooke's Collection.
27 $\frac{5}{8}$	23	7 $\frac{7}{8}$	8 $\frac{1}{4}$	Do. . . .	Earl of Dunmore.
-27 $\frac{1}{2}$	23	8 $\frac{1}{2}$	13	Do. . . .	E. D. Scott.
27 $\frac{1}{2}$	22 $\frac{1}{4}$	7 $\frac{3}{8}$	8 $\frac{1}{2}$	?	C. D. Rudd.
27 $\frac{1}{2}$	23 $\frac{1}{2}$	7 $\frac{1}{2}$	15 $\frac{3}{8}$	Delagoa Bay . . .	Sir H. J. Goold-Adams.
27 $\frac{3}{8}$	...	8 $\frac{1}{8}$	10 $\frac{1}{8}$	South Africa . . .	Sir Edmund G. Loder, Bart.
-27 $\frac{1}{4}$	22 $\frac{3}{4}$	7 $\frac{1}{4}$	10 $\frac{5}{8}$	?	Julius Jeppe.
-27 $\frac{1}{8}$	23 $\frac{1}{2}$	...	14	Delagoa Bay . . .	H. T. and A. H. Glynn.
27	...	8	9 $\frac{1}{8}$	Shiré River, B.C.A. . .	F. Vaughan Kirby.
27	22 $\frac{5}{8}$	7 $\frac{3}{4}$	11 $\frac{1}{4}$	?	J. R. Buckler.
-27	...	...	...	?	W. J. Corder.
26 $\frac{3}{4}$	22 $\frac{1}{4}$	7 $\frac{1}{2}$	11	?	F. E. Potter.
26 $\frac{3}{4}$	22 $\frac{3}{8}$	7	11 $\frac{3}{4}$	Amatongaland . . .	H. A. Bryden.
-26 $\frac{3}{8}$	...	7	10	Delagoa Bay . . .	Capt. W. Jardine.
26 $\frac{1}{4}$	22	6 $\frac{7}{8}$	11 $\frac{5}{8}$	Do. . . .	F. C. Selous.
26	...	7 $\frac{3}{8}$	8 $\frac{7}{8}$	Zululand . . .	Hon. Charles Ellis.
26	...	...	10	Sabi Valley . . .	T. R. G. Owen.



Horns of West African Bushbuck, from the Gambia.

WEST AFRICAN BUSHBUCK (*Tragelaphus gratus*).

Together with its near ally the situtunga, this species differs from the other members of the group by the extreme elongation of the hoofs, which are thus adapted for supporting the weight of the body on the spongy soil of the marshes in which these antelopes dwell. The lateral hoofs, too, are much more developed than in other harnessed antelopes. The general coloration of the West African species is very similar to that of the nyala, the ground-colour of the coat of the male being olive, and that of the female bright rufous, marked in both sexes with white stripes on the body and spots on the face. There is, however, no fringe of long hair on the throat. Height

at shoulder about 3 feet 7 inches. Both in this species and the *situnga* the horns of the males are longer and more twisted than in the other members of the genus, and thus come very close to those of the kudus. In the *situnga* the coloration of the adult is uniform grayish brown. The West African species ranges from the Congo to the Gaboon and Cameroon districts. It has but seldom been collected by sportsmen, so that very little is known of its habits in the wild state. Several specimens have been bred in captivity at the Zoological Gardens, Amsterdam.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
34 $\frac{3}{4}$	28 $\frac{1}{2}$	8	21	Gambia . . .	H. C. Goddard.
32 $\frac{1}{4}$	27 $\frac{1}{4}$	9 $\frac{1}{8}$	16 $\frac{1}{8}$	Gaboon . . .	Sir Edmund G. Loder, Bart.
30	26 $\frac{1}{4}$	7 $\frac{3}{4}$	14 $\frac{7}{8}$	?	Julius Jeppe.
29 $\frac{1}{2}$	24 $\frac{1}{2}$	8 $\frac{1}{8}$	14	Gaboon . . .	Sir Edmund G. Loder, Bart.
28 $\frac{1}{2}$	23	8	8	Gambia . . .	A. Ohlsson. (See illustration.)
25 $\frac{1}{4}$	21 $\frac{1}{4}$	6 $\frac{3}{4}$	12 $\frac{1}{4}$	Do. . . .	Guy H. Sangster.
25 $\frac{1}{2}$	22	8	...	French Congo . . .	Hon. Walter Rothschild.
...	19	...	...	Gaboon . . .	British Museum.
23 $\frac{1}{2}$	18	7 $\frac{7}{8}$	11 $\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
22 $\frac{3}{4}$	19 $\frac{1}{2}$	7	10 $\frac{3}{8}$	Nigeria . . .	Major J. A. Burdon.
-21.5	...	7.8	...	?	Berlin Museum.
-19 $\frac{7}{8}$	...	6 $\frac{3}{4}$	10	?	Major W. Anstruther Thomson.
-17	14 $\frac{3}{16}$	6 $\frac{3}{8}$	...	Ogooné . . .	Paris Museum.



Frontlet and Horns of Situtunga Bushbuck, from Mr. John Yule's specimen.

SITUTUNGA BUSHBUCK (*Tragelaphus spekei*).

Situtunga in Barotsiland.
Zowè in the Chilala and Chibisa
 countries.

Nakong of the Batauwani at Lake
 Ngami.

Situtunga, *Puvula*, *Unzuzu* of the
 tribes on the Chobi and Central
 Zambesi.

N'zoé of the natives of Lakanga
 River north of the Zambesi.

This species, also known as the nakong, has the same habits and make as the West African bushbuck, from which it differs by its uniformly grayish-brown colour; the young alone being faintly barred and spotted. Another peculiarity is to be found in the length and

silkeness of the hair. The horns, which are nearly smooth and strongly keeled, form nearly two complete turns, and thus approximate to those of the kudu.

Distribution.—The situtunga is an inhabitant of the dense reed-swamps bordering the rivers of Central, South-Central, and East Africa. The form inhabiting the Zambesi and Chobi valleys has been separated as *T. selousi*, on account of the female being coloured like the male. These antelopes are semi-aquatic in habits, frequently burying themselves up to the eyes in the water. Consequently they are some of the most difficult of all antelopes to kill; and have even baffled the energy of Mr. Selous. By firing the reed-beds in the dry season, the natives are able to spear the situtunga as they cross open water. At night these antelopes leave the reed-brakes for the islands in the rivers, but before dawn return to their impenetrable covert. Mr. A. B. Phipps, in a letter dated October 1895, states that they have become very rare in the swamps bordering the Okavango River, owing to that river having changed its course and ceased to flow into the Botletli. Consequently they go down to the latter for water, and are shot. A few are found on a bush-clad rocky island far out in the Victoria Nyanza; in which neighbourhood the species was first discovered by the late Captain Speke. Some writers separate the members of the long-hooped group as *Limnotragus*.—

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
35 $\frac{7}{8}$	28 $\frac{5}{8}$	8	15 $\frac{1}{8}$	Lake Mweru . .	Hon. Walter Rothschild.
35	28	7 $\frac{1}{2}$	15 $\frac{1}{2}$	South end of Lake Tanganyika	John Yule. (See illustration.)
-33 $\frac{1}{2}$	27 $\frac{5}{8}$	7 $\frac{7}{8}$	19	?	Julius Jeppe.
33 $\frac{1}{4}$	26 $\frac{1}{4}$	8	16 $\frac{5}{8}$	Okavango Valley .	Sir H. J. Goold-Adams.
-33	...	...	...	?	Alfred Ebdon.
32 $\frac{3}{4}$	27 $\frac{3}{8}$	7 $\frac{3}{8}$	26 $\frac{5}{8}$	Chinde . . .	Hon. Walter Rothschild.
32 $\frac{5}{8}$	27	7 $\frac{1}{2}$	16 $\frac{3}{8}$	Chobi Valley . .	F. C. Selous.
-32 $\frac{3}{8}$	...	7 $\frac{1}{2}$	18 $\frac{7}{8}$	?	P. C. Keytel.
31 $\frac{7}{8}$	25 $\frac{3}{4}$	8 $\frac{1}{8}$	17 $\frac{1}{4}$	Near Linyanti . .	F. C. Selous.
31 $\frac{1}{4}$	24 $\frac{3}{8}$	7	16 $\frac{1}{8}$	Chobi Valley . .	British Museum (F. C. Selous.)
31 $\frac{1}{2}$	25 $\frac{3}{8}$	7 $\frac{1}{2}$	13 $\frac{1}{4}$	Bangweolo . . .	F. Smitheman.
-31 $\frac{1}{8}$	25 $\frac{9}{16}$	7 $\frac{7}{8}$	14 $\frac{5}{8}$	Congoland . . .	Paris Museum (S. de Brazza).

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
31	23 $\frac{3}{4}$	8	9 $\frac{1}{2}$	?	G. Richards.
30 $\frac{3}{4}$	26	8	20	?	A. G. Biden.
30 $\frac{1}{2}$	...	...	..	?	O. R. Dunell.
30 $\frac{1}{2}$	24 $\frac{1}{4}$	8 $\frac{1}{4}$	14 $\frac{3}{4}$	Barotsiland	Sir Edmund G. Loder, Bart.
30 $\frac{1}{2}$	25 $\frac{1}{2}$	7 $\frac{1}{4}$	16 $\frac{1}{4}$	Do.	Capt. J. Carden.
30 $\frac{1}{2}$	24 $\frac{1}{2}$	7 $\frac{1}{4}$	12 $\frac{1}{2}$	B.C.A.	Grahamstown Museum.
30	24	7	18 $\frac{3}{4}$	?	Rowland Ward.
-30	25	7 $\frac{7}{8}$	18	?	Mr. Justice Hopley.
29 $\frac{3}{4}$	25	8 $\frac{3}{4}$	17	?	R. A. Cooper.
-29 $\frac{1}{2}$	26	7 $\frac{3}{4}$	16	?	A. Ohlsson.
29 $\frac{3}{8}$	24	7 $\frac{1}{2}$	17 $\frac{1}{4}$	?	A. H. Bainbridge.
-29	...	...	...	?	W. J. Corder.
-28	...	7 $\frac{3}{4}$	13	?	Capt. W. Jardine.
28	23 $\frac{1}{2}$	8	17	Lake Mweru	R. H. Venables Kyrke.
20 $\frac{3}{4}$	18 $\frac{1}{4}$	6 $\frac{1}{4}$	10	Benguela	G. W. Penrice.
-17 $\frac{1}{4}$	...	5 $\frac{3}{4}$	7	Victoria Nyanza	E. Gedge.
15 $\frac{3}{4}$	14 $\frac{1}{8}$	5 $\frac{3}{8}$	8 $\frac{3}{4}$	Do.	Hon. Walter Rothschild.



Head of Male Kudu.

GREATER KUDU (*Strepsiceros capensis*).

<i>Agarzin</i> of the Abyssinians.	<i>Muzeeloua</i> of the Batongas.
<i>Eebala-bala</i> of the Amandebele.	<i>Ngoma</i> in the Chilala and Chibisa countries.
<i>Ee-zilarwa</i> of the Makalakas.	<i>Noro</i> of the Mashonas.
<i>Dwar</i> of the Masaras.	<i>Tolo</i> of the Bechuanas.
<i>Godir</i> of the Somalis.	<i>Tolo</i> in Barotsiland and Ngamiland.
<i>Itolo</i> of the Basutos.	<i>Unza</i> of the Mazubias.
<i>Itshongonons</i> of the Swazis.	<i>Unzwa</i> of the Makubas.

Although rather less brilliantly coloured than some of the harnessed antelopes, the kudus are among the handsomest of all antelopes, their spiral horns, striped coat, and noble carriage rendering them really magnificent creatures. Their chief difference from the bushbucks is to be found in the fuller spiral formed by the horns and their larger ears: both sexes being nearly similar in colour. The special characteristics of the greater or true kudu are the large size (height at shoulder reaching to 4 feet 10 inches or 5 feet), the presence of a thick fringe of long hair on the throat, and the open spiral of the horns of the bull. The colour is too well known to require description.

Distribution.—The kudu, in suitable localities, ranges over the greater part of Africa south of the Sahara, extending from Abyssinia and Somaliland through East and Central Africa to the Cape, and westward across the continent to Angola, where the Congo apparently forms its northern limits. In spite of its bulk, it is an adept at concealment; and this trait, coupled with its general wariness and acute sense of smell and hearing, has largely contributed to its survival in districts where it is much hunted. Except in the Uitenhage jungles, where it is preserved by English farmers, the kudu has been exterminated from Cape Colony. In Eastern Mashonaland it is still abundant, as it is in the highlands of Somaliland, in which country it is rarely met with on the plains.

Although unrivalled at getting across rocky hills, the kudu is by no means a good performer on the flat (where it seldom allows itself to be surprised), and can be ridden down without much difficulty by a fairly well-mounted hunter.

Horned females occur rarely.

GREATER KUDU

303

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-...	48 $\frac{7}{8}$	...	...	Ngamiland . . .	F. H. Barber. (See illustration.)
64	41	11	23	Mashonaland . . .	F. C. Selous.
63	48 $\frac{1}{2}$	12 $\frac{1}{2}$	49	Macloutsie River . . .	E. W. Tompson.
-63	44 $\frac{1}{2}$	...	42 $\frac{3}{4}$	Near Tete, Zambesia . . .	Major P. W. Forbes.
-63	39	10 $\frac{1}{2}$	12	?	Mr. Justice Hopley.
-...	45 $\frac{1}{2}$	...	...	Delagoa Bay . . .	F. H. Barber.
-61 $\frac{1}{2}$	45 $\frac{1}{2}$	10 $\frac{3}{4}$	34	?	A. Griffiths.
61 $\frac{1}{2}$	45 $\frac{1}{4}$	...	...	South Africa . . .	O. R. Dunell.
60 $\frac{3}{4}$	44 $\frac{1}{2}$	12	29	Do. . . .	Frank Harris.
60 $\frac{5}{8}$	45 $\frac{3}{8}$	11 $\frac{1}{2}$	33	Macloutsie River . . .	F. C. Selous.
-60 $\frac{5}{8}$	44	...	31	South Africa . . .	H. T. and A. H. Glynn.
-60 $\frac{1}{2}$	47	10 $\frac{1}{2}$	44 $\frac{3}{4}$	Do. . . .	A. Ohlsson.
-60	39	10	7 $\frac{5}{8}$	Lebombo Mountains . . .	F. Vaughan Kirby.
-59 $\frac{3}{4}$	45 $\frac{1}{8}$	...	39 $\frac{3}{4}$	Pungwe Valley . . .	Major A. St. H. Gibbons.
59 $\frac{1}{4}$	42 $\frac{1}{4}$	11 $\frac{5}{8}$	19	?	G. Richards.
-59 $\frac{1}{4}$	...	10 $\frac{1}{2}$	46 $\frac{3}{4}$	?	P. C. Keytel.
-58 $\frac{3}{4}$	46 $\frac{1}{2}$	11 $\frac{1}{2}$	41 $\frac{3}{4}$	Transvaal . . .	F. Van Zeller.
-58 $\frac{1}{2}$	45	...	46	?	O. R. Dunell.
-58 $\frac{1}{2}$	45	11 $\frac{1}{2}$	44 $\frac{3}{4}$	?	Mr. Justice Hopley.
-58 $\frac{1}{2}$	43	12 $\frac{1}{2}$	35	?	J. L. Drège.
-58 $\frac{1}{4}$	46	10	39 $\frac{3}{4}$	South Africa . . .	Julius Jeppe
58	46	11 $\frac{5}{8}$	39	S.E. Mashonaland . . .	J. G. Millais.
58	43	10	40	Somaliland . . .	G. Chetwynd.
-58	46	...	...	Zomba, B.C.A. . . .	D. MacAlpine.
58	43 $\frac{1}{2}$	10 $\frac{1}{4}$	32 $\frac{1}{2}$	Okavango River . . .	Sir H. J. Goold-Adams.
-58	41	...	...	South Africa . . .	South-African Museum.
57 $\frac{1}{2}$	41	11 $\frac{1}{8}$	21 $\frac{1}{2}$	N.E. Transvaal . . .	A. M. Naylor.
57 $\frac{1}{2}$	41 $\frac{1}{2}$	10	27	Do. . . .	Capt. D. J. Marker.
57 $\frac{1}{2}$	41	10 $\frac{1}{2}$	25	British Central Africa . . .	J. H. Hayes.
57 $\frac{1}{2}$	44	11 $\frac{1}{4}$	31	Transvaal . . .	Capt. A. C. H. Kennard.
-57 $\frac{3}{8}$	39	9 $\frac{5}{8}$	32	Somaliland . . .	The late J. Johnston-Stewart.

On outside curve.	Length. Straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
57½	45½	10½	35	British Central Africa	H. C. Macdonald.
57½	42	11½	41	Baringo	H. Hyde-Baker.
57½	44½	11½	34½	South Africa	Sir Edmund G. Loder, Bart.
57½	43	11½	34½	Mashonaland	H. and C. Beddington.
57	43	14	32	South Africa	A. Moseley.
57	42½	11	31	Do.	Capt. M. D. Graham.
57	39½	9½	36½	Somaliland	H. R. H. le Duc d'Orléans.
56½	43½	11½	26½	Matabililand	W. Van Ness.
56½	42½	10½	38½	?	Sir Victor Brooke's Collection.
56½	41½	10½	23½	Matabililand	Hon. C. Greville.
56½	38½	9½	28½	Somaliland	J. Benett-Stanford.
-56½	35	10½	30	Do.	Sir Edmund G. Loder, Bart.
56½	44½	11½	33½	South Africa	Hon. Walter Rothschild.
56	44	10½	39	Do.	F. B. Dunsford.
55½	41½	...	35	Mazoe River	R. C. Batley.
55½	41	10½	36	Do.	F. Struben.
55½	39½	10½	26½	Mashonaland	A. Neilson.
55½	42½	11½	37	Matabililand	Lord Brackley.
55½	42½	10½	38	Do.	Major James Grant.
-55½	...	10½	43	Limpopo	Imperial Museum, Vienna.
-55½	...	...	30½	Matabililand	Capt. W. Jardine.
55	41½	11½	28	Do.	Major R. Hayes-Sadler.
55	40½	12½	32½	Zululand	C. D. Rudd.
-55	41	10	41	?	The MacLaine of Lochbuie.
55	40	11	36	?	A. H. Bainbridge.
54½	39½	10½	27½	Upper Shiré, B.C.A.	C. C. Bowring.
54½	40½	11	21½	Mashonaland	S. Chillingworth.
-54½	39	11	27½	South Africa	Dublin Museum.
-54½	38½	11	26	Do.	Durban Museum.
-54½	...	...	...	Do.	Abel Chapman.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
54 $\frac{1}{2}$	40 $\frac{3}{4}$	10 $\frac{1}{2}$	39 $\frac{1}{2}$	Zululand . . .	C. H. Akroyd.
-54 $\frac{1}{2}$	38 $\frac{7}{8}$	10 $\frac{1}{4}$	22 $\frac{5}{8}$	Somaliland . . .	P. H. G. Powell-Cotton.
54	41	11	37 $\frac{3}{4}$	? . . .	Sir Edmund G. Loder, Bart.



Frontlet and Horns of Greater Kudu, from Mr. F. H. Barber's specimen.

54	42	10 $\frac{3}{4}$	35 $\frac{1}{2}$	Zululand . . .	A. Cameron.
54	42	11 $\frac{3}{4}$	39 $\frac{3}{4}$	Mashonaland . . .	Earl of Dunmore.
-54	40 $\frac{1}{2}$	10 $\frac{1}{2}$	31 $\frac{1}{4}$	South Africa . . .	Dr. W. P. Y. Bainbrigg.
54	40	11 $\frac{1}{4}$	24	Do. . . .	Lieut.-Col. W. Sitwell.
-54	39	10 $\frac{1}{4}$	32	Somaliland . . .	Norman B. Smith.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
54	39 $\frac{3}{4}$	11	25 $\frac{1}{2}$	River Ruaha . . .	A. Mathews.
-53 $\frac{3}{4}$	41 $\frac{1}{4}$	10 $\frac{1}{4}$	32 $\frac{1}{2}$	S.W. Somaliland . .	C. V. A. Peel.
...	40.7	8.8	30.9	Bahr Setit . . .	Prince Henry of Liechten- stein.
53	41 $\frac{1}{2}$	11 $\frac{3}{4}$	47 $\frac{1}{4}$	Lake Rudolf . . .	A. E. Butter.
51 $\frac{1}{2}$	40	10	42	Sudan . . .	Col. B. T. Mahon.
-50	...	...	...	Do. . .	Capt. R. V. Savile.
-50	39 $\frac{1}{2}$	10	28	Angola . . .	E. P. Cooper.
49	35 $\frac{1}{4}$	10	21 $\frac{1}{2}$	Sudan . . .	Major C. E. Wilson.
49	36	10	36 $\frac{1}{4}$	Do. . .	Capt. G. S. Nickerson.
48	35 $\frac{3}{4}$	10 $\frac{1}{4}$	32	Kordofan . . .	Capt. J. G. A. Massy.
47 $\frac{3}{4}$	35 $\frac{3}{4}$	9 $\frac{1}{2}$	20	Sudan . . .	Capt. H. H. S. Morant.
♀ 37	10	...	...	South Africa . . .	F. C. Selous.
♀ 27 $\frac{1}{2}$	...	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Do. . .	Julius Jeppe.



Malformed Horns of Kudu from South-west Africa, in the Collection of
Mr. O. Volkmann.



Head of Male Lesser Kudu, from a specimen shot by Mr. Norman B. Smith.

LESSER KUDU (*Strepsiceros imberbis*).

Godir of the Somalis.

Sara of the Abyssinians of Danakil.

Gadams of the Gallas.

Kungu of the Swahilis.

Except for its brighter colour, the closer spiral and smaller divergence of the horns, and the absence of a fringe of long hair on the throat (whence the name *imberbis*), this beautiful little antelope might almost pass for a miniature of its larger relation. Height at shoulder about 3 feet 5 inches. Weight about 230 lbs.

Distribution.—North-East Africa, from Somaliland to German and British East Africa. This antelope generally goes in pairs or threes, and is partial to the cover of thick bush from which it seldom emerges except for the purpose of feeding.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
35 $\frac{1}{4}$	26 $\frac{1}{2}$	5 $\frac{3}{8}$	17 $\frac{3}{4}$	N. Somaliland	G. Chetwynd.
35 $\frac{1}{4}$	26 $\frac{1}{4}$	7 $\frac{1}{2}$	16 $\frac{1}{2}$	Do.	Norman B. Smith. (See illustration.)
34 $\frac{1}{4}$	26	6 $\frac{1}{2}$	11	Do.	Hon. Walter Rothschild.
34	26 $\frac{1}{2}$	...	...	Do.	Major H. G. C. Swayne.
34	26	6 $\frac{3}{4}$	14 $\frac{1}{4}$	Do.	W. W. Ashley.
34	27	6 $\frac{3}{4}$	11	Do.	British Museum (R. McD. Hawker).
33	25 $\frac{3}{4}$	6 $\frac{7}{8}$	14	East Africa	A. H. Neumann.
32 $\frac{1}{2}$	25 $\frac{1}{8}$	7	8	Somaliland	Lieut.-Col. T. R. Harkness.
32 $\frac{1}{4}$	25 $\frac{3}{4}$	7	17	Do.	Sir Edmund G. Loder, Bart.
-32	26	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Hawash, Abyssinia	Prince de Lucinge.
32	24 $\frac{1}{2}$	7	14 $\frac{1}{2}$	N. Somaliland	W. F. Whitehouse.
31 $\frac{3}{4}$	24 $\frac{1}{4}$	6 $\frac{1}{4}$	14 $\frac{1}{2}$	Do.	Lord Delamere.
31 $\frac{1}{2}$	25 $\frac{1}{4}$	6 $\frac{3}{8}$	11 $\frac{5}{8}$	Do.	Sir John Kirk.
-31 $\frac{1}{2}$	24	6 $\frac{1}{2}$	12	Do.	T. W. H. Clarke.
31 $\frac{1}{2}$	24	6 $\frac{3}{4}$	...	Do.	Col. C. C. Ellis.
31 $\frac{1}{4}$	25	7	10	Do.	Major G. F. T. Leather.
31	25	7 $\frac{1}{4}$	9 $\frac{1}{2}$	Do.	W. H. Cobb.
31	24	6 $\frac{3}{4}$	9 $\frac{1}{2}$	Do.	G. H. Cheetham.
-30 $\frac{3}{4}$	25	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Do.	Viscount Edmond de Poncins.
30 $\frac{3}{4}$	24 $\frac{3}{8}$	6 $\frac{5}{8}$	11 $\frac{7}{8}$	Do.	W. D. James.
-30 $\frac{3}{4}$	25 $\frac{1}{8}$	7 $\frac{1}{8}$	13 $\frac{3}{8}$	Do.	O. Neumann.
30 $\frac{5}{8}$	25 $\frac{1}{2}$	6 $\frac{3}{4}$	11 $\frac{1}{8}$	Do.	A. H. Straker.
-30 $\frac{5}{8}$	...	...	11 $\frac{1}{4}$	Somaliland	P. C. Keytel.
-30 $\frac{5}{8}$	23 $\frac{3}{4}$	6	11 $\frac{1}{2}$	?	J. ff. Darling.
30 $\frac{1}{2}$	23 $\frac{5}{8}$	6	9 $\frac{1}{2}$	Tana River	C. Hankey.
30 $\frac{1}{4}$	24	6 $\frac{5}{8}$	11 $\frac{7}{8}$	Somaliland	H.R.H. le Duc d'Orléans.
30	24 $\frac{1}{4}$	6 $\frac{3}{4}$	13	Do.	T. P. A. Holford.
30	23 $\frac{1}{2}$	7	7 $\frac{3}{4}$	Abyssinia	A. E. Butter.
30	23 $\frac{1}{2}$	6 $\frac{1}{4}$	13 $\frac{1}{4}$	Somaliland	W. N. McMillan.



Skull and Horns of Bongo.



Horns of Male Bongo, from the type specimen in the British Museum. .

BONGO (*Boöcerus euryceros*).

This magnificent antelope, which comes next in point of size to the eland and kudu, was long considered a member of the bushbuck group, with which it agrees in the general type of coloration. It differs, however, in that the tail is tufted (like that of an eland), and also by the presence of horns in both sexes, at least in the East African race (*B. euryceros isaaci*). The coat is bright chestnut-red, marked with a number of narrow vertical white stripes, a white crescent on the breast, and a pair of white spots below the eyes. There is no throat-fringe, and the hair is short. The worn tips of the horns are yellow. Height about 4 feet.

Distribution.—West Africa, from Liberia, through Fanti to the Ashkankolu Mountains and the Gaboon, and thence through the forest district to Uganda.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
32 $\frac{1}{4}$	26 $\frac{5}{8}$	10 $\frac{1}{2}$	12 $\frac{1}{4}$	Togoland . . .	Claude Beddington. (See illustration, p. 310).
31 $\frac{3}{4}$	26 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{8}$	West Africa . . .	Sir Victor Brooke's Collection.

On front curve.	Length.		Circum-ference.	Tip to Tip.	Locality.	Owner.
	Straight.					
30 $\frac{1}{4}$	24 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{4}$	West Africa	. . .	Julius Jeppe.
30	24 $\frac{1}{8}$	9 $\frac{5}{8}$	11 $\frac{1}{4}$	Ashkankolu Mountains		British Museum.
29 $\frac{1}{2}$	25 $\frac{7}{8}$	9 $\frac{3}{4}$	10 $\frac{1}{8}$	Gaboon	. . .	British Museum (P. Du Chaillu).
29	24 $\frac{1}{2}$	10 $\frac{1}{4}$	...	Mau Forest	. . .	R. J. Church.
28 $\frac{1}{2}$	24	9 $\frac{1}{4}$	10	Togoland	. . .	Hon. Walter Rothschild.
27 $\frac{1}{2}$	24	10 $\frac{3}{8}$	12 $\frac{1}{4}$	Mau Forest	. . .	Do.
27 $\frac{1}{2}$	23 $\frac{1}{2}$	9 $\frac{5}{8}$	12 $\frac{1}{4}$	?		Mr. Justice Hopley.



Horns of Bull Eland.

COMMON ELAND (*Taurotragus oryx*).

<i>Doo</i> of the Masaras.	<i>Mpofu</i> of Swahili.
<i>Ee-pofu</i> of the Makalakas.	<i>Mpofu</i> in Barotsiland.
<i>Eland</i> of the Dutch and English.	<i>Mpofu</i> in Ngamiland.
<i>Impofu</i> of the Amandebele.	<i>Oo-shefu</i> of the Macubas.
<i>Insefu</i> of the Masubias and Batongas.	<i>Pofu</i> of the Bechuanas.
<i>Mofu</i> of the Mashonas.	<i>Msongo</i> in the Chilala and Chibisa countries.
<i>Moju</i> of the Gallas.	

Eland, which are the largest of all antelopes, resemble the bongo in the presence of horns in both sexes; these forming a close spiral like a screw, with an upward and outward direction. Female horns are more slender than those of the bulls. They likewise resemble the bongo in possessing a long, tufted, ox-like tail, but have a distinct dewlap.

Bulls of the common eland stand from 5 feet 9 inches to as much as $6\frac{1}{2}$ feet at the shoulder. They have a large tuft of brown hair on the forehead, and the horns are of moderate length and stoutness. The typical race (*T. oryx typicus*), which formerly extended from the Cape nearly to the Zambesi, has a uniformly tawny skin, without transverse white stripes or a dark brown band above the knees; and appears to be the largest form. Apparently somewhere in Rhodesia a dark brown band is assumed by immature bulls. And as we go northward towards the Zambesi, and thence north and east into the heart of the continent, the bulls have not only this dark leg-band, but the body in both sexes is marked by fine vertical white lines. As this striped variety was discovered by Livingstone and his companions, it has been appropriately named *T. oryx livingstonianus*. Westward the species ranges into Angola.

Throughout Southern Africa, largely owing to the skin-hunters, eland are now becoming exceedingly scarce; and they have already more or less completely disappeared from Cape Colony, Natal, the Orange River Colony, Griqualand West, and the Transvaal. In the northern Kalahari, where they subsist for a great part of the year without water, large herds are still to be met with. No species of large game is more easily approached than eland, and, as a rule, none succumbs more speedily to the bullet. Occasionally female eland develop horns in which the spiral is almost obsolete and the length exaggerated; these have been supposed to indicate a distinct species (*Antilope triangularis*).



Malformed Horns of Cow Eland in the Collection of Major W. Anstruther Thomson.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ 39½	7	26¾	?	Major W. Anstruther Thomson.
² 39½	13	...	Nr. Lado, White Nile	Major-Gen. Sir F. R. Wingate.
² 38¾	13	38½	Bahr-el-Ghazal . .	Hon. Walter Rothschild.
- ♀ 36	7½	21½	?	P. C. Keytel.
¹ ♀ 35¾	7½	15	Angola . . .	C. W. Sharp.
- ♀ 35⅞	8⅞	20⅞	Zomba Plain, B.C.A. .	Dr. Percy Rendall.
- ♀ 33½	...	...	?	F. H. Barber.
♀ 32½	6¾	...	Chobi Valley . .	M. C. Greaves-Bagshawe.
♀ 32½	6¾	5¾	South Africa . .	Julius Jeppe.
- 32½	...	...	?	Carl Hagenbeck.
² 32½	9½	20	White Nile . .	Major R. M. Sanders.
♀ 32½	7½	8¾	?	Mr. Justice Hopley.
♀ 32	9½	20½	Mashonaland . .	F. C. Selous.
♀ 32	8	20	British Central Africa .	Capt. J. S. Brogden.
- ♀ 32	...	22½	?	C. R. Swanson.
³ 31¾	12½	22¾	?	Hon. Walter Rothschild.
♀ 31¾	7¾	17	Matabililand . .	Major R. Hayes-Sadler.
♀ 31¾	7½	15½	?	F. Struben.
♀ 31¾	8½	28½	Barotsiland . .	R. T. Coryndon.
♀ 31¾	7½	18½	Mashonaland . .	S. Chillingworth.
♀ 31¾	8	...	Barotsiland . .	Col. C. Harding.
³ 31½	10½	25½	East Africa. . .	F. J. Jackson.
³ 31½	12¾	12½	Near where Salisbury now stands	British Museum (F. C. Selous).
♀ 31½	8½	20¾	Mashonaland . .	Do.
³ 31	16	14	Mashonaland . .	F. C. Selous.
- 31	9½	21	Nyasaland . . .	F. Vaughan Kirby.
- ♀ 31	9	12	British Central Africa .	Capt. J. Brander Dunbar.
³ 31	13	15¾	Matabililand . .	Capt. J. P. Grenfell.
- 30¾	11½	28¾	Nyasaland . . .	Major P. W. Forbes.
³ 30¾	8½	25	?	R. A. Cooper.

¹ *Triangularis*.² *Taurotragus oryx gigas*.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
- ♀ 30 $\frac{3}{4}$	8 $\frac{1}{4}$	10	Pungwe . . .	Capt. W. Jardine.
♀ 30 $\frac{3}{8}$	7 $\frac{1}{2}$	21 $\frac{3}{4}$	Ngamiland . . .	Sir H. J. Goold-Adams.
30 $\frac{1}{2}$	11 $\frac{1}{2}$	20 $\frac{1}{2}$	British Central Africa .	Capt. F. D. Markham.
-30 $\frac{1}{2}$	...	...	?	O. R. Dunell.
-30 $\frac{1}{2}$	13	20 $\frac{3}{4}$	British Central Africa .	F. D. Markham.
-30 $\frac{1}{4}$	11 $\frac{3}{4}$	17 $\frac{1}{2}$	P. E. Africa . . .	M. L. M. Vaudin.
-30 $\frac{1}{2}$	...	17 $\frac{1}{2}$	Batoka Plateau . . .	R. T. Coryndon.
♀ 30 $\frac{1}{4}$	8 $\frac{1}{4}$	4 $\frac{1}{2}$	P. E. Africa . . .	Lieut.-Col. A. J. Arnold.
-30 $\frac{1}{4}$	11 $\frac{3}{4}$	18 $\frac{1}{4}$	Do. . . .	H. M. von Archer.
♀ 30 $\frac{1}{4}$	7 $\frac{1}{4}$	18	British Central Africa .	H. N. Tate.
♀ 30	7 $\frac{1}{4}$	20 $\frac{1}{4}$	Hanyani Valley . . .	Capt. M. D. Graham.
-30	12	15 $\frac{3}{4}$	Do. . . .	J. B. Wheelwright.
-30	...	11 $\frac{1}{2}$	Barotsiland . . .	F. V. Worthington.
-29 $\frac{3}{4}$	9 $\frac{1}{2}$	9	British Central Africa .	H. C. Macdonald.
29 $\frac{3}{4}$	12 $\frac{3}{8}$	19 $\frac{1}{4}$	Do. . . .	H. N. Tate.
-29 $\frac{1}{2}$	12	27 $\frac{3}{8}$	Do. . . .	W. H. Wilson.
29 $\frac{1}{2}$	8	22	Do. . . .	Commander A. T. Hunt, R.N.
29 $\frac{1}{2}$	13	20 $\frac{3}{4}$	Do. . . .	H. N. Tate.
-29 $\frac{1}{4}$	15 $\frac{1}{2}$	12 $\frac{3}{4}$	South Africa . . .	A. Ohlsson.
- ♀ 29 $\frac{1}{4}$	8 $\frac{1}{2}$	17	Do. . . .	Mr. Justice Hopley.
29	10	17	Near Ngamiland . . .	Sir H. J. Goold-Adams.
♀ 29	7 $\frac{1}{8}$	18 $\frac{1}{2}$	Matabililand . . .	Hon. C. Greville.
29	12 $\frac{1}{2}$	14	Do. . . .	Abe Bailey.
29	8 $\frac{1}{4}$	13 $\frac{3}{4}$	Benguela	G. W. Penrice.
-29	...	...	Pungwe	Count E. Hoyos.
29	12	21	British Central Africa .	Capt. J. S. Brogden.
29	11	15 $\frac{1}{2}$	?	J. S. Dawson.
-29	13	20 $\frac{1}{2}$	Mazoe River . . .	R. C. Batley.
27 $\frac{1}{2}$	10	15 $\frac{3}{4}$	Tana River . . .	Major H. De Prée.
26 $\frac{1}{2}$	12	9 $\frac{1}{4}$	N. of Machakos . . .	E. J. Mardon.



Frontlet and Horns of Bull Senegambian Eland, from the Gambia.

SENEGAMBIAN ELAND (*Taurotragus derbianus*).

Although living specimens appear formerly to have been in the collection at Knowsley, this magnificent species is chiefly known in England by the horns. These are longer and stouter than those of the common species, and thus confirm the statements as to the larger size of the western animal. The bulls are reported to have no dark fore-lock, but a dark-brown mane. The colour of the hair is rufous, instead of fawn.

Distribution.—The open districts of the interior of Senegambia and Gambia.

Length straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-40	13½	Single horn	?	Berlin Museum.
-39⅞	...	...	?	Paris Museum.
34½	14½	22¾	Gambia . . .	Sir Edmund G. Loder, Bart.
-34	13½	...	?	F. Coburn.
34	12¾	...	?	J. Carr Saunders.
-34	11½	17	Gambia . . .	Dublin Museum.
33	13¾	26	Do. . . .	C. Sharland.
32½	12½	29⅞	Do. . . .	British Museum (Earl of Derby).
32½	9½	12¾	?	Sir Edmund G. Loder, Bart.
32½	13	23½	Gambia . . .	H.R.H. le Duc d'Orléans.
32	13	24½	?	Hon. Walter Rothschild.
31⅞	11⅞	28⅞	Gambia . . .	British Museum (Earl of Derby).
31½	12½	15½	Do. . . .	H. C. Goddard.
31½	12	18⅞	?	Sir Victor Brooke's Collection.
-31	11½	...	Gambia . . .	Sir R. B. Llewelyn.
30⅞	10¾	26¾	?	British Museum (F. W. Reade).
-27 ⁹ / ₁₀	13⅞	23⅞	Senegambia . .	Paris Museum.
♀ 25	9	10¾	Gambia . . .	H. C. Goddard.
♀ 24½	9	6½	Do. . . .	British Museum (F. W. Reade).



Head of Chamois shot by Mr. R. K. Cross.

CHAMOIS (*Rupicapra tragus*).

With the chamois we take leave of the antelopes properly so-called, and come to a group connecting the former to a considerable extent with the true goats, one member of the group being indeed commonly designated the Rocky Mountain goat. Most of these ruminants are more or less goat-like in general appearance, having narrow goat-like teeth and short or moderately long tails. Their horns, which are black in colour, are, however, quite distinct from those of the goats, being for the most part cylindrical in section, and curving backwards. From the other members of the group the chamois is at once distinguished by the sharp hook formed by the backward curvature of the horns, which rise almost vertically from the head. The coloration is too well known to need description, although attention may be directed to the dark streak running from the eye to the side of the muzzle. Height at shoulder reaching 32 inches; weight of male

generally about 65 lbs. (although 125 lbs. has been recorded in one case), that of female from 45 to 50 lbs.

Distribution.—The mountains of Central and Southern Europe, from the Pyrenees to the Apennines and Caucasus. Probably four distinct races may be recognised, namely, the comparatively small izard of the Pyrenees, the true chamois, or gems, of the Alps, a third form in the Apennines, and a fourth in the Caucasus.

Length on front curve.	Circum- ference.	Tip to Tip.	Spread.	Locality.	Owner.
-12 $\frac{3}{4}$	...	...	...	Hungary . .	Baron Donald Schönberg.
¹ -12 $\frac{1}{4}$	4 $\frac{1}{8}$	...	7 $\frac{1}{2}$	Retyezat, Carpathians	Count Arpad Teleki. (See illustration.)
12 $\frac{1}{8}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	6 $\frac{1}{8}$	Carpathians . .	C. G. Danford.
-12	4	...	...	Hinter Riss . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
-12	...	...	...	Tyrol (?) . .	Count Arco.
-12	...	...	...	Carpathians . .	Count Zdenko Kinsky.
-11 $\frac{1}{2}$	...	...	...	Retyezat . .	Count Erbach.
-11 $\frac{1}{2}$	3 $\frac{5}{8}$	6 $\frac{7}{8}$	...	Albreis Morteratch, Engadine	A. E. Pease.
11 $\frac{3}{8}$	3 $\frac{5}{8}$	7 $\frac{5}{8}$	...	S. Austria . .	J. Hamilton Leigh.
11 $\frac{3}{8}$	3 $\frac{3}{8}$	5 $\frac{7}{8}$	...	Do. . .	R. K. Cross.
11 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	...	? . .	Col. Howard.
-♀ 11 $\frac{1}{4}$	...	4 $\frac{1}{8}$	...	Retzezah, Transyl- vania	Baron A. Nopcsa.
-11 $\frac{1}{10}$	...	...	...	Retyezat . .	G. Kendeffy.
11	3 $\frac{1}{2}$	4 $\frac{9}{10}$	...	Transylvania . .	F. C. Selous.
-11	3 $\frac{3}{4}$	5 $\frac{1}{2}$	...	? . .	Count John of Meran.
-10 $\frac{7}{8}$	3 $\frac{1}{4}$	6 $\frac{7}{8}$	...	Bulgaria . .	Dr. Albert von Stephani.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{9}{10}$	...	Tyrol . .	Sir Edmund G. Loder, Bart.
-10 $\frac{3}{4}$	...	5 $\frac{1}{2}$	...	Hinter Riss . .	Sir Clement Hill.
-10 $\frac{3}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{2}$	...	Herzegovina . .	Eberhard Hollinek.
♀ 10 $\frac{3}{8}$	3	5 $\frac{1}{4}$	...	Austria . .	Hon. Walter Rothschild.
-♀ 10 $\frac{3}{4}$	...	5 $\frac{1}{4}$	...	Mestacan . .	C. G. Danford.
-♀ 10 $\frac{5}{8}$	...	...	7	S. Austria . .	R. K. Cross.
-10 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	...	Austria . .	H.R.H. the Duke of Braganza.

¹ 123 $\frac{1}{2}$ lbs. not clean.

Length on front curve.	Circumference.	Tip to Tip.	Spread.	Locality.	Owner.
$10\frac{1}{2}$	$2\frac{3}{4}$	5	...	?	Count John of Meran.
$10\frac{1}{2}$	$3\frac{9}{10}$	...	...	Austria . . .	L. R. Rate.
♀ $10\frac{1}{2}$	$3\frac{3}{4}$	$6\frac{3}{4}$	...	S. Austria . . .	J. Hamilton Leigh.
$10\frac{5}{10}$	...	...	...	Retyezat . . .	Baron P. Inkey.
$10\frac{1}{4}$	$3\frac{1}{2}$	$5\frac{1}{4}$	...	?	E. N. Buxton.
$10\frac{1}{4}$	$4\frac{1}{8}$	$3\frac{7}{8}$	..	Tyrol . . .	Sir Edmund G. Loder, Bart.
$10\frac{1}{4}$	3	$5\frac{3}{8}$	..	?	Count Palffy.
$10\frac{1}{4}$	$3\frac{1}{4}$	$5\frac{1}{4}$	...	Austria . . .	Sir Robert Harvey, Bart.
♀ $10\frac{1}{4}$	...	...	...	Grindelwald . . .	F. A. Labouchere.
$9\frac{3}{4}$	$3\frac{3}{4}$	3	...	W. Caucasus . . .	St. George Littledale.
9	3	$5\frac{1}{4}$	...	Pyrenees . . .	Sir Victor Brooke's Collection.
$8\frac{3}{4}$	3	3	...	Caucasus . . .	Prince E. Demidoff.
$-8\frac{1}{2}$	3	$3\frac{3}{4}$	...	N. Spain . . .	Abel Chapman.
-6	2	$4\frac{1}{8}$	...	France . . .	Dr. Albert von Stephani.

Some of the trophies of His Majesty the Emperor and King of Austria-Hungary. Between 1849 and 1902 His Majesty has shot 1991 chamois.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ $11\frac{1}{4}$	$3\frac{3}{8}$	$6\frac{5}{8}$	Salzkammergut . . .	July 26, 1889.
11	$3\frac{3}{8}$	$5\frac{1}{4}$	Do. . .	December 10, 1859.
$10\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{7}{8}$	Do. . .	„ 28, 1868.
$10\frac{1}{2}$	$3\frac{7}{8}$	$4\frac{7}{8}$	Do. . .	July 31, 1885.
$10\frac{3}{8}$	$3\frac{3}{8}$	$5\frac{1}{8}$	Do. . .	November 10, 1870.
$10\frac{3}{8}$	$3\frac{7}{8}$	$4\frac{7}{8}$	Do. . .	July 31, 1885.
♀ $9\frac{5}{8}$	$2\frac{3}{4}$	$7\frac{1}{2}$	Do. . .	„ 10, 1886.
$8\frac{5}{8}$	$3\frac{1}{4}$	$8\frac{1}{4}$	Do. . .	August 1, 1885.



The best Chamois shot by His Majesty the Emperor and King of Austria-Hungary.



The first three Chamois shot by His Majesty the Emperor and King of Austria-Hungary.



Head of Himalayan Goral. From a Nepalese specimen in the British Museum.

HIMALAYAN GORAL (*Urotragus goral*).

Goral of the W. Himalaya. *Pj, Pjar, Rai, Rom* of Kashmir.
Sáhare, Sarr of the Sutlej valley.

The gorals are near relatives of the serows, from which they may be distinguished by their generally smaller size, shorter horns, and absence of face-glands, as well as by certain differences in the conformation of the skull. The horns curve regularly backwards, are conical in form, and marked by small irregular ridges for the greater part of their length. The hair is somewhat rough and shaggy, and the tail considerably longer than in the chamois. In general colour the Himalayan goral is brown, tending more or less to rufous or grayish, with the face paler and rufescent, a black line from the nape down the back to the tail (which is also black), and a dark stripe down the front of each leg. Height at shoulder from 26 to 28 inches; weight from 58 to 63 lbs.

By English sportsmen the goral is commonly termed the Himalayan chamois, its habits being very similar to those of the true chamois.

Distribution.—The Himalaya, from Bhutan and Sikhim to Kashmir, at elevations from 3000 to 6000 feet.

Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
-9 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{5}{16}$	Near Musuri . . .	H. Simons.
-8 $\frac{1}{2}$	...	...	Bissahir . . .	Lieut.-Col. A. E. Ward.
-9 8 $\frac{1}{2}$	...	...	Dalhousie . . .	The late J. Johnston-Stewart.
8 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{3}{4}$	Garhwal . . .	D. L. R. Lorimer.
-8 $\frac{1}{8}$	3 $\frac{1}{2}$	...	?	Col. J. Biddulph.
-8	...	...	Chamba . . .	Major C. B. Vandeleur.
8	3 $\frac{3}{4}$	3 $\frac{1}{8}$	Do. . .	Major Cecil Levita.
-7 $\frac{7}{8}$	4	2 $\frac{3}{8}$	Do. . .	Capt. J. T. C. Murray.
7 $\frac{5}{8}$	3 $\frac{3}{4}$	3 $\frac{1}{2}$	?	British Museum (Hume Col- lection).
7 $\frac{1}{2}$	3	2 $\frac{3}{4}$	Near Musuri . . .	A. O. Hume.
-7 $\frac{1}{2}$	...	...	Near Dalhousie . . .	Capt. F. E. S. Adair.
7 $\frac{7}{16}$	3 $\frac{1}{2}$	2 $\frac{3}{4}$	Chamba . . .	A. H. Ogilvy Spence.
7 $\frac{1}{4}$	3	3	Do. . .	Capt. F. W. H. Walshe.
7 $\frac{1}{8}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . .	Sir Edmund G. Loder, Bart.
-7 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{5}{8}$	Jhelam Valley, Kash- mir	P. H. G. Powell-Cotton.
7	2 $\frac{3}{4}$	3 $\frac{3}{4}$	?	Major J. A. Orr-Ewing.
-7	3 $\frac{1}{4}$	3 $\frac{1}{8}$	?	Capt. H. W. Codrington.
-7	...	...	Near Almora, N.W.P.	Capt. B. H. Boucher.
-7	...	...	?	Indian Museum.
-7	...	...	Punjab . . .	Capt. A. Hicks-Beach.
7	3 $\frac{3}{4}$	3 $\frac{3}{4}$	?	Duke of Bedford.
7	3 $\frac{3}{4}$	...	?	Major G. S. Rodon.
7	3 $\frac{5}{8}$	4	Chamba . . .	Lieut.-Col. H. D. Olivier.
7	3 $\frac{3}{8}$	2 $\frac{1}{8}$	Kashmir . . .	Sir Robert Harvey, Bart.
7	3 $\frac{3}{8}$	2 $\frac{5}{8}$	Do. . .	J. H. Phelps.
9 7	2 $\frac{3}{4}$	2	?	Capt. F. W. H. Walshe.

OTHER GORALS.

Species.	Collected by	Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
<i>Urotragus edwardsi</i>	Père A. David	$8\frac{1}{8}$ $8\frac{5}{16}$	$7\frac{1}{2}$ $7\frac{1}{8}$	4 2	Moupin, Tibet	Paris Museum.
„ <i>argyrochoetus</i>	Do.	$9\frac{1}{2}$	$7\frac{1}{8}$	4	Ta - tsien - lou, Szechuan	Do.
„ <i>caudatus</i>	Do.	$6\frac{5}{16}$ $6\frac{1}{4}$	$3\frac{9}{16}$ 4	$3\frac{1}{2}$ $3\frac{1}{2}$	North of Peking ?	Do. British Museum.
„ <i>cinereus</i>	Do.	$7\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{5}{16}$	Tibet	Paris Museum.
„ <i>griseus</i>	Do.	$4\frac{3}{4}$	$3\frac{1}{8}$	$2\frac{3}{8}$	Do.	Do.

JAPANESE SEROW (*Nemorhædus crispus*).

A small species serving in some degree to connect the gorals with the serows, since it agrees approximately in size with the former, but in other characters with the latter.

Distribution.—The southern islands of Japan ; an allied species (*N. swinhoei*) inhabiting the island of Formosa.

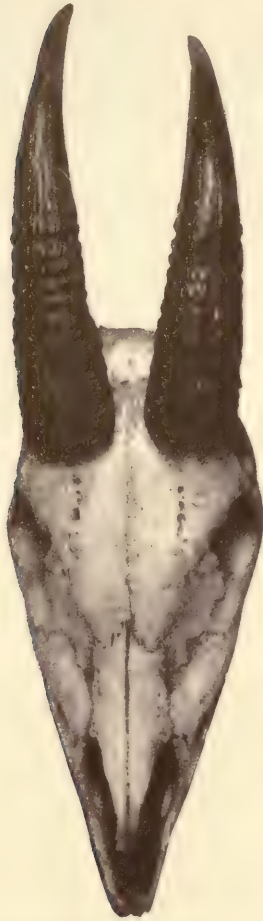
Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$-6\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{3}{4}$	Japan	Imperial Museum, Vienna.
$5\frac{1}{4}$	$3\frac{1}{8}$	$3\frac{1}{8}$	Do.	British Museum.
$4\frac{3}{4}$	3	$3\frac{1}{4}$	?	E. L. Fletcher.

BURMESE SEROW (*Nemorhædus sumatrensis*).

A large and clumsily built ruminant, with the ears long, the hair coarse, rather thin, and elongated into a crest from the nape to the withers; the under-fur found in the gorals being absent. The general colour of the upper-parts is black or dark gray, with a grizzled appearance, owing to the whitish bases of the hairs; the under-parts, shoulders, and thighs being rusty red. Although by no means large, the shining black, somewhat rugose horns form decidedly handsome trophies. Height at shoulder about $34\frac{1}{2}$ inches.

Distribution.—From the Eastern Himalaya, Moupin in Tibet, and Yunnan, to Sumatra, occurring throughout the Assam Hills, Burma, Siam, and the elevated tracts of the Malay Peninsula.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$10\frac{1}{8}$	5	$1\frac{7}{8}$	Burma . . .	O. F. Wheeler-Cuffe.
10	$5\frac{1}{8}$	$3\frac{7}{8}$	Do. . . .	Do.
$-9\frac{1}{2}$	5	5.5	Arakan Hills . .	A. O. Hume.
$9\frac{1}{4}$	5	2.75	Garô Hills . .	Do.
9	5	2	Sumatra . . .	British Museum (Hume Collection).
-9	5	5	Burma . . .	Capt. G. H. Evans.
-9	...	...	Do. . . .	C. Toussaint.
-9	...	...	Arakan Hills . .	Indian Museum.
-9	...	...	Do. . . .	H. A. Kelso.
-9	...	...	Mogôk . . .	H. S. Fournier.
$-8\frac{9}{10}$	$5\frac{1}{2}$	$4\frac{1}{4}$	Manipur . . .	Capt. H. S. Wood.
$8\frac{3}{4}$	5.5	$4\frac{3}{4}$	Muleyit . . .	A. O. Hume.
$-8\frac{3}{4}$	$4\frac{7}{8}$	$2\frac{1}{8}$	Perak . . .	Perak Museum.
$-8\frac{5}{8}$	...	...	Burma . . .	R. C. E. Underwood.
$8\frac{1}{4}$	5	$3\frac{1}{2}$	Upper Burma . .	Hon. Walter Rothschild.
$-8\frac{1}{8}$	$5\frac{1}{8}$	$5\frac{1}{4}$	Perak . . .	Perak Museum.
-9 7	...	...	Arakan Hills . .	W. Thom.



Skull and Horns of Male Himalayan Serow (Mr. A. O. Hume's record specimen).

HIMALAYAN SEROW (*Nemorhædus sumatrensis bubalinus*).

Serow, serowa of Gurhwal and many parts of the Himalaya.

Ramu-Halj, Sálábhír.

Jungal, Kangra.

Yamu, Kulu.

Goa, Chamba.

Aimu, Kumaon.

Although commonly regarded as a distinct species, there can be little hesitation in classing this animal as a local race of the last, more especially as intermediate forms appear to occur in the neighbourhood of Darjiling. The chief distinction is the less decidedly rufous tint

of the hair of the western race. Height at shoulder from 33 to 37 or 38 inches; weight from 120 to 190 lbs.

Distribution.—Throughout the Himalaya from Kashmir to the Mishmi Hills, at elevations of from 6000 to 12,000 feet; also recorded from Yunnan.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-12.25	6.5	2.75	Gurhwal . . .	A. O. Hume. (See Illustration on page 329.)
-12	...	...	Himalaya . . .	Lieut.-Col. A. E. Ward.
-11	...	...	?	Lieut.-Col. R. H. Rattray.
10½	5½	3½	?	Hon. Charles Ellis.
-10½	5½	3½	Gurhwal . . .	A. P. Davis.
-10½	...	...	North of Musuri . .	Capt. Harry V. Brooke.
-10	5½	5½	Mishmi Hills . . .	A. O. Hume.
9¾	5½	4½	?	Sir Victor Brooke's Collection.
9¾	5½	6	Pir Panjal . . .	British Museum (R. Lydekker).
9½	5¼	¾	?	Col. C. M. Haggard.
9½	5½	4¾	Kashmir . . .	St. George Littledale.
9½	4¾	3¼	Nepal . . .	British Museum (B. H. Hodgson).
9½	5½	3¾	?	Sir Edmund G. Loder, Bart.
-9 9¾	5½	4	Sind Valley . . .	P. H. G. Powell-Cotton.
9¾	5 11/16	3¾	Chamba . . .	Capt. C. W. Tribe.
9 1/4	4¾	3½	Do. . . .	Do.
9	4½	2½	North of Musuri . .	Capt. B. R. M. Glossop.

HIMALAYAN SEROW

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Length on
front curve.

Circum-
ference.

Tip to Tip.

Locality.

Owner.



Skull and Horns of Male Takin. From Col. J. Biddulph's specimen.

TAKIN (*Budorcas taxicolor*).

Although recently suggested to be related to the musk-ox, this strange ruminant is more generally regarded as an aberrant relative of the serows. It is heavily built, with stout limbs, large lateral hoofs, a short tail, a convex profile, and an almost completely hairy muzzle. But its most remarkable feature is to be found in the horns, which are large, massive, and bent somewhat after the fashion of those of a gnu, curving at first outwards and somewhat downwards, and then bending abruptly upwards about the middle of their length. Height at shoulder about $3\frac{1}{2}$ feet. Horns are present in both sexes, as in the serows and gorals, those of the female being somewhat smaller than those of the males.

Distribution.—Typically the Mishmi Hills on the northern frontier of Assam, but represented by one local race in Tibet, and perhaps another in China. Although living within sight of Indian territory, it does not appear that takin have ever been killed by English sportsmen, and specimens are very rare in collections.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25	13	11½	Mishmi Hills	F. J. Needham.
24½	...	...	Do.	Col. J. Biddulph. (See illus- tration.)
24½	12¾	12¾	Do.	Indian Museum.
22¾	10½	14¾	Assam	British Museum.
22¾	11	12	Mishmi Hills	Duke of Bedford.
22	12¾	12½	Do.	Bombay Natural History Society.
21¾	12	10	Do.	Rowland Ward.
21	12	13½	Do.	A. J. Walter.
20¾	11¾	11¾	Assam	British Museum (Hume Col- lection).
20¾	11¾	12½	Mishmi Hills	A. O. Hume.
20¾	10	12½	Do.	Hon. Walter Rothschild.
20½	10¾	12¾	?	British Museum (B. H. Hodgson).
19¾	11	11½	Mishmi Hills	Col. J. Biddulph.
19¾	11	15	?	Sir Edmund G. Loder, Bart.
19½	12	14½	?	W. J. Reid.



Frontlet and Horns of Young Male Takin. From Mr. A. O. Hume's specimen.

TIBETAN TAKIN (*Budorcas taxicolor tibetanus*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-19 $\frac{3}{4}$	11 $\frac{1}{2}$	13 $\frac{3}{4}$	Tibet	Paris Museum (Père A. David).

KANSU TAKIN (*Budorcas taxicolor sinensis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{3}{4}$	Kansu, China . .	Hon. Walter Rothschild.

ROCKY MOUNTAIN GOAT (*Oreamnus montanus*).

This is one of the very few mammals that are permanently white or whitish at all seasons; and although commonly termed a goat, it really belongs to the same group as the serows, which it closely resembles in the form and colour of the horns. In winter the hair is very long and pure white in colour; along the back it is erect, and much elongated on the withers and haunches, so as to give to the animal the appearance of possessing a pair of humps. The summer coat is comparatively short, and has a yellowish tinge. Height at shoulder just short of 3 feet; weight about 300 lbs.

Distribution.—North America; throughout the Rocky Mountains, from about lat. 36° in California at least as far north as lat. 60°.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-11 $\frac{1}{2}$	...	...	British Columbia .	Clive Phillippis-Wolley.
-11	...	...	Kutenay, B.C. . .	John T. Fannin (measured by).
-10 $\frac{1}{2}$	5 $\frac{3}{4}$	...	Montana	Walter James.
10 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{1}{2}$	British Columbia .	R. Rankin.
-10 $\frac{1}{8}$	6 $\frac{1}{2}$	...	Similkameen River, British Columbia	Arthur Pearse.
10 $\frac{1}{8}$	5	6 $\frac{1}{8}$	?	E. N. Buxton.
10 $\frac{1}{8}$	5 $\frac{3}{4}$	7 $\frac{1}{4}$	British Columbia .	M. Egerton.
-♀ 10 $\frac{1}{8}$	4 $\frac{3}{4}$	...	Do. . . .	Capt. A. Egerton.
10	5 $\frac{3}{8}$	6 $\frac{3}{8}$	Do. . . .	J. V. Colby.
-9 $\frac{3}{4}$	5	...	Montana	President Roosevelt.
9 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{4}$	N.W. Territories .	S. Ratcliff.
9 $\frac{3}{4}$	5 $\frac{1}{4}$	6	Do. . . .	H.R.H. le Duc d'Orleans.
9 $\frac{5}{8}$	5 $\frac{1}{4}$	6 $\frac{1}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.

ROCKY MOUNTAIN GOAT

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Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
9½	5½	6¼	Alaska . . .	St. George Littledale.
9½	4½	...	North America . .	J. D. Cobbold.
♀ 9½	4¼	5½	British Columbia .	P. B. Vander-Byl.
9½	5¼	6⅝	East Kutenay, B.C. .	A. E. Butter.
9½	6	5	British Columbia .	W. Neilson.



Head of Male Rocky Mountain Goat.



Head of Male Himalayan Tahr.

HIMALAYAN TAHR (*Hemitragus jemlaicus*).

The three species of tahr are the first representatives of that great group of ruminants which also includes the true goats and sheep. In all these animals horns are, as a rule, present in both sexes, and are generally more or less distinctly angulated; while the cheek-teeth have tall and narrow crowns like those of the serows, which the tahr serve to connect with the true goats. From the latter tahr are readily distinguished by the small size of their horns, which exceed but little in length the head, as well as by the absence of a beard on the chin of the males. The Himalayan tahr is easily recognised by the great length of the hair of the body, which, although in museum specimens generally combed straight, is very shaggy in nature; and likewise by the form of the horns, which have a knotted sharp keel in front. Height at shoulder from 36 to 40 inches; weight about 200 lbs. Mr. Wilson, "Mountaineer," had a pair of horns with a length of $16\frac{1}{2}$ and girth $10\frac{1}{2}$ inches, as measured by Mr. A. O. Hume.

Distribution.—The Himalaya, from Bhutan to Kashmir.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15	$9\frac{3}{4}$	$5\frac{3}{4}$	Chamba	Col. C. M. Haggard.
-14 $\frac{11}{16}$	$8\frac{3}{4}$	5	Do.	Capt. J. T. C. Murray.
-14 $\frac{3}{4}$	...	...	Do.	A. H. Ogilvy Spence.
-14 $\frac{5}{8}$	...	...	?	H. Vansittart.
14 $\frac{9}{16}$	$8\frac{3}{4}$	...	Chamba	J. S. Rivett-Carnac.
14 $\frac{1}{4}$	9	$4\frac{5}{8}$	Kishtwar	Capt. W. F. Corbett.
-14 $\frac{1}{4}$	...	...	Chamba	Mrs. W. W. Baillie.
14 $\frac{1}{4}$	$8\frac{7}{8}$	$4\frac{3}{8}$	?	A. Cadell.
14 $\frac{1}{8}$	$8\frac{7}{8}$	$6\frac{5}{8}$	Kumaon	A. O. Hume.
14 $\frac{1}{8}$	...	...	?	A. B. Lindsay.
14	...	...	?	Capt. R. L. Tottenham.
-14	...	..	?	Lieut.-Col. A. E. Ward.
13 $\frac{7}{8}$	9	$8\frac{3}{8}$	Chamba	Hugo de Burgh.
13 $\frac{7}{8}$	...	...	Do.	Col. R. J. Heber-Percy.
13 $\frac{3}{4}$	9	$11\frac{1}{4}$	?	British Museum (Hume Collection).
13 $\frac{3}{4}$	$8\frac{1}{4}$	$7\frac{3}{4}$	?	I. Morse.
13 $\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{1}{2}$	Kashmir	J. H. Phelps.
13 $\frac{1}{2}$	$8\frac{1}{2}$	$7\frac{1}{4}$	Chamba	Lieut.-Col. H. D. Olivier.
-13 $\frac{1}{2}$	...	..	Do.	Capt. F. W. H. Walshe.
-13 $\frac{1}{2}$	10	...	?	Major C. F. Blane.
13 $\frac{7}{8}$	9	$8\frac{7}{8}$	Chamba	A. W. Robertson, Glasgow.
13 $\frac{3}{8}$	$9\frac{1}{8}$	$5\frac{3}{4}$	?	Hon. Walter Rothschild.
13 $\frac{1}{4}$	$8\frac{7}{8}$	$5\frac{3}{8}$	?	Sir Victor Brooke's Collection.
13 $\frac{1}{4}$	$8\frac{1}{4}$	$6\frac{7}{8}$	Nepal (?)	Sir Edmund G. Loder, Bart.
13 $\frac{1}{4}$	$8\frac{1}{2}$	...	?	E. L. Phelps.
13 $\frac{1}{4}$	9	5	?	P. H. G. Powell-Cotton.
13	9	...	?	Indian Museum.
-13	$9\frac{3}{4}$	...	Chamba	Capt. A. Hicks-Beach.
-13	$9\frac{1}{4}$	...	Himalaya	Major-General A. A. A. Kinloch.
13	9	$6\frac{3}{4}$	?	Capt. J. Carden.
13	$8\frac{3}{8}$	$6\frac{3}{4}$	?	P. Church.



Skull and Horns of Male Arabian Tahr. (From Thomas, *P.Z.S.* 1894.)

ARABIAN TAHR (*Hemitragus jayakeri*).

A much smaller and rather shorter-haired species than the last, of a generally tawny brown colour, with relatively longer and more slender horns, which are less boldly knotted on the front edge. Height at shoulder about $24\frac{1}{2}$ inches.

This species, of which the type specimen is in the British Museum, was first obtained by Col. A. S. G. Jayaker, in honour of whom it was named by Mr. O. Thomas in 1894.

Distribution.—Jebel Taw, and probably some of the other ranges of Oman, South-East Arabia.

Length on front
curve.

Locality.

Owner.

$-11\frac{1}{2}$

Oman Mountains

Col. A. S. G. Jayaker.



Head of Male Nilgiri Tahr.

NILGIRI TAHR (*Hemitragus hylocrius*).

Although commonly designated by British sportsmen the "Nilgiri ibex," this species (the warriattu of the native shikaris) is really a member of the same genus as the Himalayan tahr. From that species it is at once distinguished by its short hair and the form of the horns; the latter having the outer surface convex instead of flat, and lacking the knotted front keel. The general colour is dark blackish-brown, old males developing a light saddle-like patch on the back. Height at shoulder from 39 to 42 inches in the males, and up to 35 inches in the females.

Distribution.—The hill-ranges of Southern India, including the Nilgiris, Anamalais, and the Western Ghats nearly to Cape Comorin; usually at elevations of from 4000 to 6000 feet, but occasionally descending to lower levels. This species has been greatly reduced in numbers by constant persecution, but as the herds have now been placed under Government protection, and a special permit is necessary for shooting, there is hope that it may increase.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-17 $\frac{1}{2}$	9 $\frac{7}{8}$	6	Nilgiris	Rhodes Morgan.
-17	9 $\frac{3}{4}$	...	Do.	Measured by Gen. MacMaster, 1869.
16 $\frac{3}{4}$	8 $\frac{5}{8}$	5 $\frac{5}{8}$	?	A. O. Hume.
-16 $\frac{1}{2}$	...	...	Nilgiris	St. George Littledale.
16 $\frac{1}{2}$	8 $\frac{1}{4}$	6	Do.	S. G. Bird.
-16	9.5	5	Do.	Rhodes Morgan.
15 $\frac{7}{8}$	7 $\frac{3}{4}$	5 $\frac{3}{8}$	Do.	J. H. Whitehouse.
15 $\frac{1}{2}$	8 $\frac{3}{8}$	7 $\frac{7}{8}$	Do.	Sir Edmund G. Loder, Bart.
15 $\frac{3}{8}$	8 $\frac{3}{4}$	6 $\frac{3}{4}$	Do.	Martyn Kennard.
15 $\frac{3}{8}$	8 $\frac{1}{4}$	6	Do.	St. George Littledale.
15 $\frac{1}{8}$	8 $\frac{5}{8}$	4 $\frac{3}{8}$	Do.	Do.
-15	8 $\frac{1}{4}$	5 $\frac{1}{8}$	Do.	Sir H. D. Tichborne, Bart.
-15	8 $\frac{1}{2}$	5	Do.	Sir W. Gordon-Cumming, Bart.
14 $\frac{3}{4}$	8 $\frac{1}{2}$	5 $\frac{5}{8}$	Do.	Capt. C. S. Timins.
14 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{4}$	Anamalai Hills . .	M. Loam.
14 $\frac{1}{2}$	8 $\frac{3}{4}$	6 $\frac{1}{4}$	Nilgiris	British Museum.
14 $\frac{1}{2}$	8 $\frac{5}{8}$	5 $\frac{1}{8}$	Do.	Sir Victor Brooke's Collection.
14 $\frac{3}{8}$	8	4 $\frac{5}{8}$	Anamalai Hills . .	Capt. T. W. Greenfield.
♀ 12 $\frac{3}{8}$	5 $\frac{1}{2}$	2 $\frac{3}{8}$	Do.	M. Loam.
♀ 11 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.
♀ 11.25	5.25	4	Do.	A. O. Hume.



Horns of Pir Panjal Markhor.

Shot by the late Major J. C. Shirres, in the Kajmag, April 22, 1884.

ASTOR and PIR PANJAL MARKHOR

(*Capra falconeri typica*, and *C. falconeri cashmiriensis*).

The markhor, of which there are several local races, probably passing more or less completely into one another, introduces us to the true goats (*Capra*). The males differ from the tahr by their much larger horns, whose length greatly exceeds that of the head, and likewise by the presence of a more or less distinct beard on the chin. In most races of the markhor the beard is extended so as to form a fringe on the throat and chest; the hair on the body being also elongated. Moreover, the horns form a spiral, quite unlike the scimeter-shape characteristic of the ibex and common goat. In the Astor (*C. falconeri typica*) and Pir Panjal (*C. falconeri cashmiriensis*) races of the markhor the horns take the form of an open corkscrew-like spiral, with comparatively few turns, recalling those of the kudu; the spiral being most open, the spread widest, and the turns fewest in the Astor form. Height at shoulder of a Gilgit specimen, $38\frac{1}{2}$ inches; of Kashmir specimens, from 38 to 41 inches; weight from

about 200 to 240 lbs. The Astor race is found in Astor and Baltistan, while the Pir Panjal form inhabits the Pir Panjal and Kajnag ranges of Kashmir, and extends to the north-west into Hazara and Gilgit, where it probably intergrades with the former.



Horns of Astor Markhor. From Mr. A. O. Hume's specimen.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-63	...	...	...	Pir Panjal . . .	Major-General A. A. A. Kinloch. ¹
-60	...	...	...	Astor . . .	Lucknow Museum.
-59	...	12	36	Kajnag . . .	The late Major J. C. Shirres. (See illustration on p. 341.)
-59	...	...	...	Pir Panjal . . .	Lucknow Museum.
-58½	40½	10	38½	Gilgit . . .	Marquis of Lansdowne.
57½	40	...	47½	Drosh . . .	B. C. Graham.
-56½	38	11	38	Kashmir . . .	J. Benett-Stanford.
-56	...	...	...	Astor . . .	Major H. Trevor.
-56	36½	13½	34½	Do. . .	Viscount Edmond de Pon- cins.

¹ Picked up either on the Pir Panjal or Kajnag Ranges by the late Col. Cuppage, and measured by General Kinloch.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-56	51½	...	...	Near Bunji . . .	Capt. T. S. Johnson.
-55½	...	9½	31½	Chilas . . .	Queen's Own Corps of Guides.
55	44½	11	47	?	East India Club.
-55	...	...	...	Astor . . .	Otho Shaw.
54½	...	10½	26½	?	A. O. Hume.
54	...	10⅝	33¾	Astor . . .	Martyn Kennard.
53¾	38½	12½	40½	Do. . .	Major J. Manners Smith.
53½	42½	11½	52 about	Do. . .	Sir Victor Brooke's Collec- tion. ¹
-53	...	9½	26	?	Lieut.-Col. A. E. Ward.
53	38¾	9¾	35½	Gilgit . . .	Hon. Walter Rothschild.
53	35¾	11¾	34½	Pir Panjal . . .	Capt. F. W. H. Walshe.
52¾	39¾	12½	33¾	Astor . . .	Martyn Kennard.
52	35	9½	42½	Gilgit . . .	Major F. H. Taylor.
51¾	37½	10	33	Pir Panjal . . .	Sir Edmund G. Loder, Bart.
-51½	...	...	36	Chitral . . .	Major G. A. Leslie.
51½	...	11¾	49¾	Astor . . .	Martyn Kennard.
-51½	...	12	44½	Haramosh . . .	P. H. G. Powell-Cotton.
50½	35¾	10½	45½	Do. . .	B. H. Shaw Stewart.
50	38	11¾	36	Astor . . .	Sir Edmund G. Loder, Bart.
50	36	10	33	Chitral . . .	R. H. Macdonald.
50	36½	12	36	Chilas . . .	Capt. W. Hayes-Sadler.
-50	29	11½	31	Haramosh . . .	E. L. Phelps.
-49¾	...	...	38	Chilas . . .	Capt. P. Hambro.
-49¾	...	11½	40	Astor . . .	H. Lennard.
-49½	32½	10½	43	Gilgit . . .	Col. J. Biddulph.
49½	36	11½	32	Chilas . . .	Capt. L. W. S. Oldham.
-49	39½	11⅞	...	Chitral . . .	C. R. Johnson.
-49	...	11	35	Haramosh . . .	Queen's Own Corps of Guides.
49	35	14	44	?	A. O. Hume, C.B. (See illustration on page 342.)

¹ Shot by Capt. Harry V. Brooke.



Skull and Horns of Pir Panjal Markhor. From Mr. A. O. Hume's specimen.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
48½	...	11½	45	Astor . . .	Capt. M. Murphy.
48½	31½	11¾	26½	Baltistan . . .	H. Z. Darrah.
48	37¾	12¾	29	Pir Panjal . . .	A. O. Hume. (See above illustration.)
48	31½	12	38	Haramosh . . .	J. V. Phelps.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
47½	..	11	...	Kashmir . . .	Major-Gen. A. A. A. Kinloch.
47½	37	12½	38	Chilas . . .	Capt. L. W. S. Oldham.
47½	34	10½	39	Chitral . . .	H. Gough.



Horns of Western Markhor. From a specimen in the Collection of Mr. A. O. Hume.



Skull and Horns of (1) Cabul, and (2) Suleman Markhor. From Mr. A. O. Hume's specimens.



Head of Male Suleman Markhor. From Mr. A. J. Grant's Waziristan specimen.

CABUL and SULEMAN MARKHOR

(*Capra falconeri megaceros* and *C. falconeri jerdoni*).

In the Cabul race of the markhor (*C. falconeri megaceros*), from the trans-Indus districts near Cabul, the horns are nearly straight, but show a slightly open spiral, being intermediate between those of the Pir Panjal and Suleman races. On the other hand, in the latter (*C. falconeri jerdoni*) the relatively small horns form a perfectly straight cone, upon which the spiral ridges run like the "worm" of a screw. The distributional area of the latter race includes the trans-Indus hill-ranges on the frontier of the Punjab, Afghanistan, and Baluchistan,

extending in the Suleman range as far as Mithankot, and also to the Quetta district.

Length in straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
48½	7¾	Odd horn Suleman race	?	British Museum.
39¾	10¼	24¼	Afghanistan	British Museum (Col. Grant).
39¼	12¼	38	Range 25 miles N.W. of Wana	A. J. Grant. (See illustration, page 347.)
38½	10½	23¾	Afghanistan	H.R.H. the Duke of Saxe-Coburg and Gotha.
37	10	32	Kurram Valley	Major G. Roos Keppel.
35¾	9¾	15	?	Capt. E. Kirkpatrick.
-35	...	...	Afghanistan	Lieut.-Col. A. E. Ward.
34¾	10¾	28	Baluchistan	The late Capt. E. W. Codrington.
33	9¼	19¾	Afghanistan	Sir Edmund G. Loder, Bart.
32½	10	22½	Buner	Queen's Own Corps of Guides.
32¼	9¾	28	?	A. O. Hume.
32	10	27½	Cabul	A. O. Hume. (See illustration on page 346.)
31½	9½	27	Suleman Range	Hon. Walter Rothschild.
30¾	10	25	Baluchistan	Col. J. Biddulph.
30¾	8¾	21½	?	Sir Victor Brooke's Collection.
29¾	8¼	23¾	Baluchistan	Lieut.-Col. R. H. Rattray.
29¼	10	19	Khyber Pass	Capt. A. L. Bickford.
-28	...	...	?	Otho Shaw.
27	9	18	Sheik Budin	Col. J. Biddulph.
26¾	11¼	22½	Suleman Range	A. O. Hume. (See illustration on page 346.)
26¼	...	18	Buner	Capt. H. W. Codrington.
26	8¾	18½	Sheik Budin	Gen. Sir H. Collett.
25½	10	21	Quetta	B. H. Shaw-Stewart.

ASIATIC IBEX (*Capra sibirica*).

The first of the true ibexes, in all of which the long scimitar-shaped horns carry bold transverse knots on the front surface. In the present species the horns are characterised by their large size and well-developed front surface; the second distinctive feature being the long beard of the males. Height at shoulder from 40 to 42 inches; weight about 206 lbs., when cleaned from 128 to 153 lbs.

Distribution.—The mountains of Central Asia, from the Altai to the Himalaya (exclusive of the Pir Panjal), and from the neighbourhood of Herat to Kumaon. Several local races of this species are recognised; namely, the Thian Shan ibex (*C. sibirica typica*), from Siberia, the Thian Shan, Altai, etc., the Irtish ibex (*C. s. lydekkeri*), the Baltistan ibex (*C. s. wardi*), and the Himalayan ibex (*C. s. sacin*), from the mountains to the northward of Kashmir and adjacent districts as far east as the source of the Ganges.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
56 $\frac{3}{4}$	11 $\frac{1}{2}$	36 $\frac{1}{2}$	Thian Shan . . .	Lord Elphinstone.
-56	...	...	Tagdumbash . . .	Lieut.-Col. A. E. Ward.
54 $\frac{3}{4}$	11 $\frac{1}{4}$	29	Thian Shan . . .	P. B. Vander-Byl.
-54 $\frac{3}{8}$	10 $\frac{1}{4}$	25	Gilgit . . .	Queen's Own Corps of Guides. ¹
54 ²	10 $\frac{3}{4}$	45	Thian Shan . . .	H.M. the King.
54	11 $\frac{5}{8}$	27	Do.	Lord Elphinstone.
-53 $\frac{3}{4}$	14	...	China	Capt. P. Hambro.
53 $\frac{1}{4}$	11 $\frac{1}{2}$	42	Thian Shan . . .	R. Hayne.
53 $\frac{1}{4}$	10 $\frac{1}{2}$	20 $\frac{1}{4}$	Gilgit	Col. J. Biddulph.
53	12	35 $\frac{1}{2}$	Thian Shan . . .	St. George Littledale.
52 $\frac{1}{2}$	12 $\frac{1}{4}$	26	Do.	P. Church.
-52	10	...	Baltistan	H.H. the Maharaja of Travancore.
51 $\frac{1}{2}$	...	...	Kashmir	Martyn Kennard.
51 $\frac{1}{4}$	9 $\frac{1}{2}$	34 $\frac{1}{2}$	?	Major J. Manners Smith.
51	9 $\frac{1}{8}$	28 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
50 $\frac{3}{4}$	11 $\frac{1}{2}$	34 $\frac{1}{2}$	Thian Shan . . .	P. B. Vander-Byl.
50 $\frac{5}{8}$	11 $\frac{1}{4}$	35 $\frac{1}{2}$	Do.	British Museum (St. George Littledale).

¹ Picked up by Lieut.-Col. R. E. Hutchinson.

² Shot by St. George Littledale.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
50	11	30½	?	Marquis of Lansdowne.
-50	10½	21	?	Capt. H. Newton.
50	12	19¾	Thian Shan . . .	J. V. Phelps.
-50	...	...	?	Major H. Trevor.
-50	...	...	?	7th Hussars.



Head of Thian Shan Ibex. From Lord Elphinstone's record specimen.

49¾	10¾	25¼	?	Sir Edmund G. Loder, Bart.
49¾	10	21½	Chitral . . .	British Museum (Capt. B. E. M. Gurdon).
-49½	11¼	27½	Baltistan . . .	Major James Grant.
49	10½	9½	Skardo . . .	Major George Douglas.
-48½	9¾	34½	Gilgit . . .	Queen's Own Corps of Guides.
48½	9¾	30½	Nubra, north of Leh .	A. O. Hume.
-48	...	...	Skardo . . .	J. L. Wood.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
48	10½	24½	Tilel Valley, Kashmir	J. Campbell of Kilberry.
-47½	...	...	Thian Shan . . .	F. A. Labouchere.
47	11¾	...	?	Carl Hagenbeck.
-47	...	...	Baltistan . . .	Major E. Guinness.
47	10	...	?	Major J. Manners Smith.
-47	...	...	Baltistan . . .	A. R. Oldfield.
46½	11	24¾	Kashmir . . .	Hon. Charles Ellis.
46½	12	20½	Altai . . .	Hon. Walter Rothschild.
46½	10	25½	Kashmir . . .	G. A. Lloyd.
-46½	...	...	?	Indian Museum.
46	9¾	25	?	Sir Victor Brooke's Collection.
-46	11¼	27	Sind Valley . . .	A. O. Hume.
46	...	...	Kashmir . . .	Capt. Hon. J. G. Beresford.
45½	9¾	19½	?	Capt. R. L. Kennion.
45½	9¾	19½	Baltistan . . .	T. R. Ubsdell.
45½	10	18½	?	A. Courage.
-45½	9¾	24¾	Baltistan . . .	Queen's Own Corps of Guides.
45	10½	29	Ladak . . .	P. H. G. Powell-Cotton.
-45	10	20¼	Gilgit . . .	Col. J. Biddulph.
-45	...	...	Kashmir . . .	Major R. L. Walter.
45	10½	23½	?	Lieut.-Col. G. D. F. Sullivan.
45	9	12½	Baltistan . . .	Major C. B. Vandeleur.
45	10¾	27	?	J. V. Phelps.



Head of Alpine Ibex, in the possession of H.M. the King of Italy.

ALPINE IBEX (*Capra ibex*).

This species, which only survives in a protected state, differs from the Asiatic ibex by the much smaller size of the beard of the male, as well as by a slight variation in the horns; the height at the shoulder reaching to about 40 inches. Weight from 85 to 106 lbs., clean. Formerly distributed throughout the higher Alps of Switzerland, Savoy, and the Tyrol, but now surviving only in a few valleys on the Italian side of Monte Rosa. Most of the few specimens now obtainable are comparatively small, and good horns are very scarce in English collections.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-44 $\frac{3}{8}$	10 $\frac{1}{4}$	1...	Valley of Aosta . . .	H.M. the King of Italy.
-39 $\frac{1}{4}$	10 $\frac{1}{8}$	40 $\frac{1}{4}$	?	Imperial Museum, Vienna.

¹ Height at shoulder, 33 $\frac{3}{8}$; weight, 170 lbs.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-38 $\frac{3}{8}$	...	...	Valley of Aosta . . .	H.M. the King of Italy.
-37 $\frac{3}{4}$	...	...	Do. . . .	Do.
35 $\frac{3}{8}$	9	26 $\frac{3}{4}$	Do. . . .	Do.
34 $\frac{1}{2}$	9 $\frac{3}{4}$	...	Styria	Sir Edmund G. Loder, Bart.
-34 $\frac{1}{4}$	9	26	Valley of Aosta . . .	H.M. the King of Italy.
33 $\frac{1}{8}$	9	39 $\frac{3}{8}$	Do. . . .	Shot by H.M. the late Victor Emmanuel.
-31 $\frac{3}{4}$	9 $\frac{1}{8}$	18 $\frac{3}{4}$	Alps of Savoy . . .	Sir Edmund G. Loder, Bart.
-30	9	21	?	Dublin Museum.
-28 $\frac{1}{4}$	9 $\frac{3}{8}$	18	Valley of Aosta . . .	C. H. Wilczek.
28	9 $\frac{1}{4}$	17 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
26 $\frac{3}{4}$	8 $\frac{3}{8}$	22 $\frac{1}{8}$	Do. . . .	British Museum.
23 $\frac{1}{2}$	8 $\frac{3}{4}$	17 $\frac{1}{2}$	?	Do.

ABYSSINIAN IBEX (*Capra vali*).

This ibex, the wala of the natives of Simien, differs from the Nubian ibex by its stouter build, shorter beard, and larger and more massive horns, on which the knots are but slightly prominent. The forehead of the skull has a conspicuous bony prominence. Although described by Rüppell in 1835, this ibex was practically unknown till 1901, when a fine series of specimens was brought home by Capt. Powell-Cotton. Height at shoulder about 40 inches. Weight about 260 lbs.

Distribution.—The mountains of Simien, Abyssinia.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ 43	10½	23	Abyssinia	Lady Meux.
¹ 42¾	10¼	18¾	Do.	H.M. The Queen.
41¾	11	16¾	Do.	P. H. G. Powell-Cotton.
41	11	18¼	Do.	Do.
40½	11	...	Do.	Hon. Walter Rothschild.
38½	11	18¾	Do.	P. H. G. Powell-Cotton.
¹ 38¼	9¾	11¼	Do.	Mrs. Rennell Rodd.
25½	7¼	13	Do.	Hon. Walter Rothschild.
♀ 13¼	4¾	8½	Do.	P. H. G. Powell-Cotton.

¹ Presented by Ras Makunnan, 1902.



Skulls and Horns of Male and Female Abyssinian Ibex. Shot by Mr. P. H. G. Powell-Cotton.



Head of the Sinaitic Race of Nubian Ibex.

NUBIAN IBEX (*Capra nubiana*).

This species may be easily distinguished from both the Asiatic and the Alpine species by the form of the horns, which are very long, rather slender, and with the outer front angle much bevelled off, so that the proper front surface is very narrow, and its transverse knots proportionately short. These races are recognised, namely, the typical Nubian form, the S. Arabian *C. n. mensesi*, and the Sinaitic *C. n. sinaitica*. In the form of its horns the latter approximates to the wild goat.

Distribution.—The mountains of Southern Arabia, Palestine, the Sinaitic Peninsula, Upper Egypt, and probably also those of Morocco and the interior of Senegambia. Arabian name, *beden*. Comparatively few European sportsmen have killed this handsome ibex.

The following specimens belong to the typical African form:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-51	8 $\frac{5}{8}$	39 $\frac{1}{2}$	Upper Egypt . . .	Prince Henry of Liechtenstein.
46 $\frac{1}{8}$	8	...	North Africa . . .	British Museum.
42	7 $\frac{1}{2}$	20	Near Suakin . . .	Hon. Walter Rothschild.
41 $\frac{3}{4}$	7 $\frac{5}{8}$	17 $\frac{5}{8}$	North Africa . . .	Major W. H. Besant.
40 $\frac{5}{8}$	7 $\frac{1}{4}$	13 $\frac{1}{4}$	Do. . . .	Julius Jeppe.
40 $\frac{1}{4}$	7 $\frac{1}{2}$	24	Do. . . .	A. Fowler.
38 $\frac{7}{8}$	7 $\frac{1}{2}$	12 $\frac{1}{2}$	Upper Egypt . . .	Sir Edmund G. Loder, Bart.
-38 $\frac{3}{4}$	..	21	North Africa . . .	J. ff. Darling.
38 $\frac{1}{4}$	8	21	Suakin	Major A. King.
37 $\frac{1}{2}$	7 $\frac{1}{8}$	9 $\frac{1}{4}$	North Africa . . .	Prince Colloredo Mannsfeld.
37	7	17 $\frac{3}{4}$	Do. . . .	Capt. N. M. Smyth.
-35 $\frac{7}{8}$	6 $\frac{7}{8}$	16 $\frac{3}{4}$	Egypt	Dr. Albert von Stephani.
35 $\frac{1}{8}$	7 $\frac{1}{8}$	12	Suakin	W. P. Gore-Graham.
30 $\frac{1}{2}$	8	17 $\frac{1}{4}$	Do. . . .	Commander A. T. Hunt, R.N.

The following specimens are Asiatic:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
50	9	...	Southern Arabia . . .	Capt. J. T. Brinkley.
42	7 $\frac{1}{4}$	...	Arabia	East India Club.
41 $\frac{1}{2}$	8	16 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
-41 $\frac{1}{20}$	...	...	Hadramut, S.E. Arabia . . .	J. Menges.
39 $\frac{3}{4}$	9 $\frac{7}{8}$	...	Markat	Do.
39 $\frac{1}{2}$	8 $\frac{7}{8}$	19 $\frac{1}{2}$	South-East Arabia . . .	Hon. Walter Rothschild.
35 $\frac{1}{2}$	6 $\frac{1}{2}$	12	Sinaitic Peninsula . . .	W. E. Pease.
35 $\frac{1}{4}$	7	15 $\frac{3}{8}$	Do. . . .	J. D. Cobbold.
-32 $\frac{7}{8}$	6 $\frac{1}{2}$	7	Do. . . .	Captain John Marriott.
32 $\frac{1}{4}$	7	18 $\frac{1}{2}$	Do. . . .	E. H. Pease.
31 $\frac{3}{8}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Do. . . .	W. Moncreiffe.
31 $\frac{1}{4}$	6 $\frac{3}{4}$	7	Do. . . .	W. E. Pease.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
30 $\frac{1}{4}$	6 $\frac{1}{8}$	13 $\frac{5}{8}$	Sinaitic Peninsula . . .	A. W. Haig.
29	...	13	Do. . . .	Hon. Walter Rothschild.
28 $\frac{1}{2}$	7 $\frac{1}{2}$	6	Do. . . .	E. N. Buxton.
25 $\frac{1}{4}$	6	12	Do. . . .	British Museum.
♀ 10 $\frac{3}{8}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	W. E. Pease.
♀ 8 $\frac{3}{4}$	3 $\frac{1}{8}$	5 $\frac{3}{4}$	Do. . . .	W. Moncreiffe.



Skull and Horns of Sind Wild Goat. From Mr. A. O. Hume's specimen.

WILD GOAT (*Capra hircus*).

The horns of the Persian wild goat (*C. hircus agagrus*), which appears to be the ancestral form of the domesticated goat of Europe and Asia (*C. hircus*), differ from those of the various species of ibex by having no distinct front surface, but merely a sharp notched keel, representing the inner front angle of the ibex horn. In old males the beard is very long. The general colour of the upper parts is brownish gray in winter and reddish brown in summer, with the under parts white, and blackish brown and white markings on the face and limbs. Height at shoulder reaching to 37 inches.

The so-called Sind ibex (*C. hircus blythi*) appears to be a second local race of the species, inhabiting Sind and parts of Baluchistan, where it probably passes imperceptibly into the Persian race. It is distinguished mainly by a slight difference in the form of the horns. A second race (*C. h. raddi*) inhabits the Caucasus. Other races inhabit the islands of the Ægean Archipelago, where they appear to have been more or less crossed with domesticated breeds.

Distribution.—The islands of South-Eastern Europe, and the mountains of South-Eastern Europe and South-Western Asia from the Caucasus through Persia to the confines of Baluchistan and Sind. Native Persian name, *pasang* (rock-footed).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55½	...	24	Persia . . .	Carl Hagenbeck.
-53	10	46	Asia Minor . .	B. Hodder.
52¾	7¾	8¾	Sind . . .	A. O. Hume. (Shot by Col. F. Marston.) See illustration.
51¼	9	7	Russian Turkestan .	Prince P. Demidoff.
48¼	8¾	13¾	Caucasus . . .	British Museum.
-48	8	20½	Sind . . .	J. D. Inverarity.
-47½	9¼	...	Cilician Taurus .	C. G. Danford.
46¾	7½	14	Sind . . .	Sir Edmund G. Loder, Bart.
46½	8¾	18¾	Asia Minor . .	F. C. Selous.
46	7½	11	Sind . . .	Major C. S. Cumberland.
-45¾	8¾	9¼	Daghestan . . .	E. N. Buxton.
45½	8¾	5	Do. . .	R. Graham.
-45¼	9¼	21	Damascus . . .	Dr. Albert von Stephani.
45¼	8	11¾	Sind . . .	Col. J. Biddulph.
44½	8¾	21¾	Caucasus . . .	British Museum.
44½	8½	11	?	British Museum (Hume Collection)
-43¼	7¾	15¼	?	Major W. Anstruther Thomson.
43	9	15¾	Taurus Range . .	Sir Edmund G. Loder, Bart.
43	8½	22¾	?	J. Carr Saunders.
42½	9	10	Russian Turkestan .	St. George Littledale.
42	8	6¾	Baluchistan . .	Sir Robert Harvey, Bart.
-42	7	12	Sind . . .	J. D. Inverarity.
-41½	...	...	Do. . .	Major E. C. Tidswell.
41¾	8¾	9¼	Russian Turkestan .	Prince E. Demidoff.
-40½	9½	...	Asia Minor . .	Imperial Museum, Vienna.
39½	7¾	14¼	Baluchistan . .	Capt. T. W. Greenfield.
-38	10½	15	Asia Minor . .	Capt. John Marriott.
-38	...	...	?	H.H. Maharaja of Travancore.
36	8¼	6¾	Baluchistan . .	Hon. Walter Rothschild.

DOMESTICATED GOAT.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
52 $\frac{1}{2}$	10 $\frac{1}{2}$	40 $\frac{5}{8}$	Daghestan . . .	Sir Edmund G. Loder, Bart.
44 $\frac{1}{4}$	6	29 $\frac{1}{4}$	Angora . . .	Do.
40 $\frac{1}{2}$	9 $\frac{3}{4}$	...	Daghestan . . .	Do.
37 $\frac{1}{2}$	7 $\frac{1}{4}$	32 $\frac{3}{4}$	Scotland . . .	Col. W. H. Walker.
37	7 $\frac{1}{2}$	35	Meoble, N.B. . .	Walter Jones.
35 $\frac{3}{4}$	7 $\frac{3}{4}$	38 $\frac{1}{4}$	?	B. de Bertodano.
34 $\frac{1}{4}$	7 $\frac{1}{2}$	38 $\frac{1}{2}$	Scotland . . .	Duke of Bedford.
34	8 $\frac{1}{2}$	32 $\frac{1}{2}$	Do. . . .	F. C. Selous.
33 $\frac{1}{2}$	8	26 $\frac{1}{2}$	Meoble, N.B. . .	Hon. O. C. Molyneux.



Head of Spanish Tur. Mr. Abel Chapman's specimen.

SPANISH TUR (*Capra pyrenaica*).

Although commonly designated an ibex, the Spanish wild goat has horns more like those of one of the Caucasian tur, and is therefore better designated as a species of that group. The horns, which have a sharp inner edge, are twisted in a very open semi-spiral, with the tips generally turned outwards, and are quite unlike those of the true ibex. In having dark and light markings on the limbs the species is, however, much more like the Persian wild goat than either of the Caucasian tur. The beard of the males varies greatly in size according to age and season. Height at shoulder from about 27 to 32 inches; weight, when clean, about 10 stone.

Distribution.—The Pyrenees and the high ranges of Central Spain, Andalusia, and Portugal. The typical form of the species inhabits the Pyrenees; those inhabiting the more southern parts may be distinguished as a separate race (*C. pyrenaica hispanica*).

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
31	$8\frac{3}{4}$	...	Pyrenees . . .	Sir Victor Brooke's Collection.
-30 $\frac{1}{4}$	$9\frac{1}{2}$	23 $\frac{1}{2}$	Central Spain . .	Abel Chapman and W. J. Buck.
-29 $\frac{3}{4}$	$8\frac{1}{4}$	23 $\frac{1}{4}$	Almeira . . .	H. Brinsley Brooke.
29 $\frac{1}{4}$	$9\frac{1}{2}$	23 $\frac{1}{4}$	Sierra Nevada . .	Abel Chapman.
-28 $\frac{3}{4}$	10 $\frac{1}{2}$	20 $\frac{5}{8}$	?	Imperial Museum, Vienna.
28	$9\frac{1}{8}$	23 $\frac{3}{8}$	Spain . . .	British Museum.
27 $\frac{3}{4}$	9	25	Do. . . .	Sir Edmund G. Loder, Bart.
27 $\frac{1}{2}$	10 $\frac{3}{8}$	19 $\frac{1}{2}$	Pyrenees . . .	British Museum.
25 $\frac{5}{8}$	$8\frac{1}{2}$	16 $\frac{5}{8}$	Spain . . .	Hon. Walter Rothschild.
-25 $\frac{1}{2}$	$9\frac{1}{2}$	13	Do. . . .	W. J. Buck.
24 $\frac{1}{2}$	10	14	Val d'Arras . .	E. N. Buxton.
23 $\frac{3}{8}$	8	16	Southern Spain . .	Pablo Larios.
22 $\frac{3}{4}$	$9\frac{1}{2}$	18 $\frac{3}{4}$	Val d'Arras . .	E. N. Buxton.
22	$7\frac{3}{4}$	14	Spain . . .	Pablo Larios.
-21 $\frac{1}{2}$	$7\frac{3}{4}$	...	Do. . . .	Prince E. Demidoff.
20	$8\frac{1}{2}$	15	Sierra Blanca . .	A. Larios.
16	$7\frac{1}{2}$	11	Spain . . .	Col. R. J. Heber-Percy.
- ♀ 10 $\frac{3}{4}$	$5\frac{5}{8}$	$7\frac{1}{2}$	Val d'Arras . .	A. E. Leatham.
♀ 9 $\frac{1}{2}$	$5\frac{3}{8}$	6 $\frac{1}{4}$	Do. . . .	E. N. Buxton.



Skull and Horns of West Caucasian Tur. Shot by Mr. St. George Littledale.

WEST CAUCASIAN TUR (*Capra caucasica*).

Of the two peculiar kinds of wild goats inhabiting the Caucasus, and locally known as tur, the present species is easily recognised by the approximation in the form of its horns (especially in immature individuals) to those of true ibex, and the uniform bright chestnut-brown colour of the hair of the adult male in the summer coat; the chin, beard, and lower parts of the legs being alone black. Although the horns present a considerable resemblance to those of ibex, they are decidedly thicker, have a different curvature, and show distinct knobs, or knots only in their upper half. In young males the knots extend the whole length of the front of the horns, and the long winter coat is a pale drab colour. Height at shoulder about $37\frac{1}{2}$ inches.

Distribution.—The western half of the main chain of the Caucasus. Certain peculiarly-shaped horns appear to indicate the existence of a hybrid race between this species and the East Caucasian tur in the Central Caucasus.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
40 $\frac{1}{8}$	12 $\frac{5}{8}$	15 $\frac{1}{4}$	Caucasus	St. George Littledale.
36 $\frac{1}{8}$	11 $\frac{5}{8}$	27 $\frac{5}{8}$	Do. . . .	Do.
34 $\frac{3}{4}$	11 $\frac{5}{8}$	22 $\frac{7}{8}$	Do. . . .	Do.
34 $\frac{1}{2}$	12	22	Kouban, Caucasus . .	Prince E. Demidoff.
33 $\frac{1}{4}$	10 $\frac{5}{8}$	26 $\frac{3}{4}$	Do. . . .	St. George Littledale.
32 $\frac{1}{2}$	11 $\frac{3}{4}$	25 $\frac{1}{2}$	Do. . . .	Do.
32 $\frac{1}{4}$	11 $\frac{1}{2}$	25 $\frac{1}{4}$	Do. . . .	Prince E. Demidoff.
31 $\frac{1}{2}$	12 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	Do.
30 $\frac{5}{8}$	11 $\frac{3}{8}$	16 $\frac{3}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
30	11 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
¹ 22 $\frac{3}{4}$	10 $\frac{7}{8}$	22 $\frac{1}{4}$	Do. . . .	St. George Littledale.

¹ Presumed hybrid between *C. caucasica* and *C. cylindricornis*.



Head of Male East Caucasian Tur.

EAST CAUCASIAN TUR (*Capra cylindricornis*).

A very different-looking creature from the last is the wild goat commonly designated by sportsmen the "Caucasian bharal"; this name being derived from the resemblance of its horns to those of the true Himalayan bharal. In spite of this point of resemblance, its affinities are, however, evidently with the goats, although it not improbably indicates a step from the more typical members of that group in the direction of the sheep. In addition to the peculiar form of its horns, this tur is characterised by the extreme shortness of the beard, which merely forms a curling fringe on each side of the chin, instead of the long central tuft observable at certain seasons in the West Caucasian species. The general colour of the fur is uniform dull brown, except on the chin, the tip of the tail, and portions of the legs, where it is blackish brown. Height at shoulder about 3 feet.

Distribution.—The Eastern Caucasus, from Kasbek to Daghestan.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
42	13 $\frac{1}{2}$	14	Caucasus . . .	Prince E. Demidoff.
38 $\frac{1}{4}$	12 $\frac{1}{2}$	...	Eastern Caucasus . .	Hon. Walter Rothschild.
36	13	...	Daghestan . . .	J. D. Cobbold.
34 $\frac{1}{2}$	10 $\frac{7}{8}$	13 $\frac{1}{2}$	Caucasus . . .	Major Talbot.
33 $\frac{3}{4}$	13	17 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
33 $\frac{3}{8}$	12	19 $\frac{3}{4}$	Do.	British Museum.
32	13	19	Do.	Berthold Smith.
31 $\frac{1}{2}$	12	7 $\frac{3}{4}$	Do.	F. G. Barclay.
31	11	28	Northern Caucasus .	Capt. H. H. P. Deasy.
30	12	17	Daghestan . . .	F. G. Barclay.



Head of Male Bharal.

BHARAL (*Ovis nabhura*).

Having horns not unlike those of the East Caucasian tur, the bharal, or blue sheep of Tibet, differs from the goats by the absence of a beard and a strong odour in the males, and on account of these and other points of difference from the goats is placed among the sheep, of which group it forms a very aberrant member. The most distinctive external features are the comparatively smooth and olive-coloured horns, which curve at first outwards and then backwards from the sides of the head, and the bluish gray colour of the thick fur of the back and sides, the flanks, under parts, and legs being handsomely marked with black and white. Height at shoulder about 36 inches; weight about 130 lbs. In the complete absence of glands on the face the bharal differs from the more typical sheep and resembles the goats.

Distribution.—Tibet, from Hunza and Shigar, in Baltistan, and near Sanju, south-east of Yarkand, to Moupin in Eastern Tibet, and from the main axis of the Himalaya, or locally some distance south of the same, to the Kuenlun and Altyn Tag; in summer usually met with at elevations between 14,000 and 16,000 feet, and apparently never found below about 10,000 feet.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-32 $\frac{1}{2}$	...	12	Milam Pass	Capt. W. de L. Williams.
-32	...	...	?	The late B. H. Hodgson, <i>P.Z.S.</i> 1840, p. 66.
31 $\frac{1}{2}$	13 $\frac{1}{2}$	22 $\frac{1}{2}$	Ladak	J. Campbell of Kilberry.
30 $\frac{7}{8}$	12 $\frac{1}{4}$	21 $\frac{7}{8}$	Gurhwal	A. O. Hume.
-30 $\frac{1}{2}$	11	15 $\frac{1}{2}$	Ladak	P. H. G. Powell-Cotton.
30	11	24	Hanle, Spiti	Capt. B. L. Carew.
-30	...	...	Baba Pass	Major R. W. Johnston.
29 $\frac{3}{4}$	12 $\frac{1}{2}$	22 $\frac{1}{2}$	Gurhwal	A. O. Hume.
29 $\frac{1}{2}$	11 $\frac{5}{8}$	25 $\frac{1}{2}$	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
29 $\frac{1}{2}$	12	26 $\frac{1}{2}$	Northern Sikkim	Surg.-Major A. Pearse.
-29	12	...	?	Lieut.-Col. A. E. Ward.
-29	...	...	?	Lucknow Museum.
28 $\frac{3}{4}$	12 $\frac{1}{2}$	22	Chang-chenmo	B. H. Shaw-Stewart.
-28 $\frac{1}{2}$	...	...	?	Major H. Trevor.
28 $\frac{1}{2}$	12 $\frac{1}{4}$	26 $\frac{1}{2}$	Hanle	Capt. F. W. H. Walshe.
-28 $\frac{1}{2}$	10 $\frac{1}{2}$	...	?	Indian Museum.
28	11	20 $\frac{1}{4}$	?	British Museum (Hume Collection).
28	11	16	Hanle	Arnold Pike.
27 $\frac{3}{4}$	10 $\frac{1}{4}$	10	Ladak	Capt. G. Campbell.
27 $\frac{1}{4}$	11	21 $\frac{1}{2}$	Do.	St. George Littledale.
-27	...	...	Do.	Otho Shaw.
27	11 $\frac{1}{2}$	28	Tibet	Major C. S. Cumberland.
26 $\frac{3}{4}$	11 $\frac{1}{2}$	23	Ladak	Col. F. C. Lister-Kay.
26 $\frac{1}{2}$	10 $\frac{1}{2}$	20	Kumaon	A. S. Crum.
26 $\frac{1}{2}$	12	15 $\frac{1}{4}$	?	Lord Stavordale.
26 $\frac{1}{4}$	11 $\frac{7}{8}$	23	?	Sir Victor Brooke's Collection.
26 $\frac{1}{4}$	10 $\frac{3}{4}$	22	?	Sir Edmund G. Loder, Bart.
26	10 $\frac{3}{4}$	25 $\frac{1}{2}$	?	R. Johnstone.
26	10 $\frac{1}{4}$	20 $\frac{1}{2}$	?	Capt. W. H. Williamson.
25 $\frac{7}{8}$	12 $\frac{1}{2}$	31 $\frac{1}{2}$	East of Padam, Zanskar	Capt. M. S. Wellby.
25 $\frac{7}{8}$	11 $\frac{1}{4}$	18 $\frac{1}{2}$	?	Major C. B. Vandeleur.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25 $\frac{3}{4}$	10	13	Ladak . . .	Capt. J. A. Stewart Balmain.
-25 $\frac{1}{2}$	11 $\frac{1}{2}$	...	Do. . . .	Major-General A. A. A. Kinloch.
25 $\frac{3}{8}$	11 $\frac{1}{4}$	25 $\frac{1}{4}$	Do. . . .	St. George Littledale.
-25 $\frac{1}{4}$	11 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	Capt. H. W. Codrington.
25	10	25 $\frac{1}{4}$	?	Major H. C. Morland.
25	12 $\frac{1}{2}$	28	?	Capt. E. Harrison.



Head of Male Arui.

ARUI or UDAD (*Ovis lervia*).

The only wild sheep found throughout the continent of Africa is the arui, or fechtal of the Arabs, the udad or Barbary sheep of naturalists; a species with horns not very unlike those of the bharal, and also lacking glands on the face, but readily distinguished by its uniformly tawny colour, the fringe of long hair depending from the throat, chest, and the upper portion of the fore-legs, and the unusual length of the tail, which exceeds that of all other wild sheep. In the length of this appendage the arui approaches domesticated sheep, of which, however, it is not likely to be the ancestor. Height at shoulder about 3 feet 3 inches.

Distribution.—The mountains of Northern Africa, from Egypt to Morocco.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
33 $\frac{1}{4}$	13 $\frac{1}{4}$	12 $\frac{3}{4}$	Algeria . . .	Julius Jeppe.
29 $\frac{1}{8}$	12 $\frac{1}{2}$	19	Do. . . .	V. Cholmondeley.
28 $\frac{3}{4}$	12	14 $\frac{3}{4}$	Do. . . .	R. A. Cooper.
28 $\frac{1}{2}$	11 $\frac{1}{2}$	18	Do. . . .	British Museum (Hon. John Ward).
28 $\frac{1}{2}$	11 $\frac{5}{8}$	18 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
-28	11 $\frac{1}{2}$	16 $\frac{1}{2}$	S. Tunisia . . .	J. I. S. Whitaker.
-27 $\frac{3}{4}$	11 $\frac{1}{4}$	14 $\frac{9}{16}$	Algeria . . .	Viscount Edmond de Poncins.
-27 $\frac{1}{2}$	12 $\frac{5}{8}$	13 $\frac{1}{8}$	? . . .	Imperial Museum, Vienna.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	Algeria . . .	Hon. John Ward.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17	Do. . . .	F. de Murietta.
25 $\frac{1}{2}$	10 $\frac{5}{8}$	16	Do. . . .	Lieut.-Col. G. J. Cuthbert.
-25 $\frac{1}{2}$	12 $\frac{1}{8}$	20 $\frac{1}{2}$	Do. . . .	Capt. John Marriott.
-25 $\frac{1}{2}$	11	18	Tunisia . . .	A. E. Pease.
23 $\frac{1}{2}$	11	14 $\frac{3}{4}$	Do. . . .	P. B. Vander-Byl.
23 $\frac{1}{4}$	10	17 $\frac{3}{8}$	S. Morocco . . .	F. G. Afialo.
- ♀ 20 $\frac{1}{4}$	10	16	Algeria . . .	A. E. Pease.
- ♀ 19	7	17	Tunisia . . .	Capt. John Marriott.
♀ 16.8	7.6	14.2	Egypt . . .	Prince Henry of Liechtenstein.



Head of Rocky Mountain Bighorn, from Mr. W. F. Sheard's specimen.

ROCKY MOUNTAIN BIGHORN (*Ovis canadensis*).

The bighorn of the American continent, inclusive of its local races (frequently regarded as distinct species), is a large sheep, distinguished from the Asiatic argalis, among other features, by the comparative smoothness of the horns, in which the outer front angle is prominent and the inner one rounded off, and also by the smaller size of the face-glands. There is a well-marked whitish patch on the rump, but the amount of white on the under parts and legs shows considerable local variation. In the typical Rocky Mountain race (*O. canadensis typica*) the ears are long and pointed, with short hair, and the horns, which are very heavy, diverge but little outwards, and generally have the tips broken. The Californian *O. canadensis nelsoni* is a paler southern race. On the other hand, in *O. canadensis stonei* of the North-West Territories the colour of the back is very dark, and the white on the belly and legs sharply defined. Both in this race and the white *O. canadensis dalli* of Alaska the horns are lighter, more divergent, and more sharply pointed, while the ears tend to become shorter, blunter, and more hairy. Height at shoulder about 3 feet 2 inches. Weight about 350 lbs.

The horns of the ewes are very small in comparison with those of the rams, seldom measuring more than 15 inches on the curve from base to tip. Large male horns are now difficult to obtain, and of late years it is seldom that those of fresh-killed specimens are seen exceeding 38 inches on the curve from tip to tip. American sportsmen are keen to obtain horns of large basal girth; but they rarely exceed 16 inches.

The Maclaine of Lochbuie possesses a specimen whose girth, according to his own measurement, is 19 inches.

Distribution.—The range of the American representatives of the Bighorn extends from the Rocky Mountains southwards to Sonora, Northern Mexico, and California, and northwards to Alaska and the shores of Bering Sea. All the American races except the Alaskan are included in the list below.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-52½	18½	...	Selkirk Range, B.C. (?)	W. F. Sheard. (See illustration.)
-45	...	...	?	W. Grant Mackay.
-42½	16½	25¾	Lower California . .	George H. Gould.
42	16	...	Wyoming . .	T. W. H. Clarke.
...	17½	...	Do. . .	Do.
-41½	15	...	Kootenay, B.C. . .	Provincial Museum, B.C.
-40¾	16½	...	Yellowstone . .	British Museum.
40½	15½	20½	?	Sir Edmund G. Loder, Bart.
-40	15½	...	Rocky Mountains . .	Otho Shaw.
40	15	21½	British Columbia . .	J. W. R. Young.
39½	15¾	...	Colorado . .	St. George Littledale.
39½	16½	24¾	Montana . .	British Museum.
39½	15½	19	?	Sir Edmund G. Loder, Bart.
38¾	15½	22	?	Gerald Buxton.
38½	16¾	...	Bighorn Mountains .	Sir H. Seton-Karr.
38½	15½	19½	Montana . .	Edmund Littledale.
38½	16	19	N.W. Territories . .	S. Ratcliff.
38	17	...	Alberta, N.W.T. . .	Arnold Pike.
38	15	...	British Columbia . .	Capt. F. Cookson.
-38	16½	...	Do. . .	Col. C. C. Ellis.
37¾	15¾	23¾	Mexico . .	J. A. H. Drought.
-37¾	16½	22½	British Columbia . .	J. O. Shields.
37½	16	15	Do. . .	Col. A. Charlesworth.
37½	15½	16	Do. . .	J. Turner-Turner.
-37	16	31	Wyoming . .	T. W. H. Clarke.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
37	16 $\frac{1}{4}$	...	Montana . . .	Major Maitland Kirwan.
37	16 $\frac{5}{8}$	16	British Columbia . . .	R. H. Venables Kyrke.
37	15 $\frac{1}{4}$	19 $\frac{1}{2}$	Wyoming . . .	Capt. H. A. C. Darley.
37	15 $\frac{1}{2}$	18 $\frac{1}{2}$	Do. . . .	Lord Rodney.
36 $\frac{3}{4}$	19	15	British Columbia . . .	C. H. Kennard.
36 $\frac{3}{4}$	15 $\frac{1}{4}$	22 $\frac{1}{2}$	Wyoming . . .	Moreton Frewen.
36 $\frac{3}{4}$	14 $\frac{1}{2}$	22 $\frac{1}{2}$	Do. . . .	A. Willis.
36 $\frac{1}{2}$	16 $\frac{1}{2}$	..	Do. . . .	Thomas Bate.
36 $\frac{1}{2}$	14	...	?	J. D. Cobbold.
36	15	9	Wyoming . . .	J. L. Scarlett.
36	14 $\frac{3}{4}$	16 $\frac{1}{2}$	Montana . . .	R. H. Sawyer.
36	14 $\frac{3}{4}$	16	Wyoming . . .	Major G. Dalrymple White.
-35 $\frac{7}{8}$	14 $\frac{3}{4}$	17 $\frac{1}{2}$	Do. . . .	Count E. Hoyos.
35 $\frac{3}{4}$	13 $\frac{3}{4}$	17 $\frac{1}{2}$	British Columbia . . .	Hon. S. Tollemache.
35 $\frac{1}{2}$	16	21	Do. . . .	T. P. Kempson.
35 $\frac{1}{4}$	12 $\frac{1}{4}$	16	California . . .	Sir Victor Brooke's Collection.
35 $\frac{1}{4}$	15 $\frac{1}{2}$	18 $\frac{1}{2}$	British Columbia . . .	Sir Peter Walker, Bart.
35	14	18 $\frac{1}{2}$	Do. . . .	Admiral Sir Michael Culme- Seymour, Bart.
-35	15	19 $\frac{3}{4}$	Wyoming . . .	Count Scheibler.
35	14	16	Do. . . .	Gerald Hardy.
34 $\frac{1}{2}$	14 $\frac{3}{4}$	19	S.E. Montana . . .	J. A. Jameson.
34 $\frac{1}{2}$	14 $\frac{1}{2}$	...	California . . .	G. P. Fitzgerald.
34 $\frac{1}{2}$	17	...	N. Chehuahua . . .	C. Sheldon.
-34	16	17	N.W. Wyoming . . .	A. Rogers.

ALASKAN BIGHORN (*Ovis canadensis dalli*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner
-43 $\frac{1}{2}$	15 $\frac{1}{2}$	26	Alaska . . .	F. Foster.
39 $\frac{3}{4}$	13	22 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
38	13 $\frac{1}{4}$	18	Do. . . .	A. E. Butter.
37	13 $\frac{3}{4}$	20 $\frac{1}{2}$	Do. . . .	Hon. J. C. Lister.
36	14 $\frac{1}{2}$	17 $\frac{3}{4}$	Do. . . .	C. G. Cowan.
34	13 $\frac{3}{4}$	21	Do. . . .	Rowland Ward.
34	12 $\frac{5}{8}$	18 $\frac{1}{8}$	Do. . . .	J. Carr Saunders.
32 $\frac{3}{4}$	13 $\frac{1}{2}$	21	Do. . . .	W. H. King.
32 $\frac{1}{2}$	13 $\frac{1}{4}$	20 $\frac{1}{2}$	Do. . . .	British Museum (J. T. Studley).
♀ 10 $\frac{5}{8}$	4 $\frac{1}{2}$	5 $\frac{3}{4}$	Do. . . .	Rowland Ward.
♀ 9 $\frac{1}{8}$	4 $\frac{3}{4}$	8	Do. . . .	British Museum.

FANNIN'S BIGHORN (*Ovis canadensis fannini*).

A provisional race characterised by the gray colour of the back.

-40 $\frac{1}{2}$	13	20	Near Dawson City .	Provincial Museum, B.C.
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NORTH-WESTERN BIGHORN (*Ovis canadensis stonei*).

32 $\frac{1}{2}$	14 $\frac{1}{4}$	28 $\frac{3}{4}$	N. British Columbia	American Museum of Natural History.
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Skull and Horns of Male Kamchatkan Bighorn. Shot by Prince E. Demidoff.

KAMCHATKAN BIGHORN (*Ovis canadensis nivicola*).

Although the Kamchatkan wild sheep is readily distinguished from the Rocky Mountain bighorn (*O. canadensis typica*) by the slenderness of the horns at the points, and their wider tip-to-tip measurement, as well as by the shorter, blunter, and more thickly haired ears, the shorter face, the longer hair of the body, and the inferior size of the white patch on the rump, yet the Alaskan and the N.W. bighorn, in which the horns are of the Kamchatkan type, and the ears are shorter than in the Rocky Mountain race, tend to bridge over these points of difference. These transitions indicate that all the bighorns are essentially local modifications of the same animal; the Asiatic forms being, as might be expected, the most aberrant. Height at shoulder about 37 or 38 inches; weight about 250 lbs.

Distribution.—Kamchatka.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39 $\frac{1}{2}$	14 $\frac{1}{2}$	28 $\frac{1}{4}$	Kamchatka . . .	Prince E. Demidoff.
38 $\frac{3}{4}$	14 $\frac{1}{2}$	30 $\frac{3}{8}$	Do. . . .	Do.
-38	13 $\frac{1}{2}$	26	Do. . . .	Dr. F. H. H. Guillemard.
-35 $\frac{1}{2}$	14	26 $\frac{1}{2}$	Do. . . .	Do.
35 $\frac{1}{2}$	14 $\frac{1}{2}$	24 $\frac{3}{4}$	Do. . . .	St. Petersburg Museum.
35 $\frac{1}{2}$	14 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	British Museum (St. George Littledale).
34 $\frac{3}{4}$	14 $\frac{1}{2}$	25 $\frac{1}{2}$	Do. . . .	St. George Littledale.
34	13 $\frac{1}{2}$	23 $\frac{5}{8}$	Do. . . .	Hon. Walter Rothschild.
32 $\frac{3}{4}$	13 $\frac{1}{2}$	23	Do. . . .	Sir Edmund G. Loder, Bart.
-31 $\frac{1}{2}$	14	26	Do. . . .	Dublin Museum.
31 $\frac{1}{2}$	13 $\frac{5}{8}$	21	Cape Chepunske . . .	Col. J. Biddulph.
-31 $\frac{1}{2}$	13 $\frac{3}{4}$	24	Kamchatka . . .	Dublin Museum.
-30 $\frac{3}{4}$	14 $\frac{1}{2}$	25 $\frac{3}{4}$	Do. . . .	Dr. Albert von Stephani.
♀ 10 $\frac{3}{4}$	5	14 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
♀ 8 $\frac{3}{4}$	5 $\frac{1}{4}$	9 $\frac{3}{4}$	Do. . . .	British Museum.

CLIFTON'S BIGHORN (*Ovis canadensis borealis*).

An East Siberian race closely allied to the last, but of a generally lighter colour, with a much larger and less well-defined white rump-patch, much white on the face, a darker tail, and larger ears.

Distribution.—The Stanovoi Mountains, the range between the valleys of the Yana and Lena, and other parts of Eastern Siberia. The only known examples in England were shot by Mr. J. Talbot Clifton, by whom a complete male specimen was presented to the British Museum in 1902.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{2}$	11	22 $\frac{1}{4}$	Yana Valley . . .	J. Talbot Clifton.
33	13	22 $\frac{1}{2}$	?	British Museum (J. Talbot Clifton).
32 $\frac{3}{4}$	11 $\frac{1}{2}$	24 $\frac{1}{2}$	?	J. Talbot Clifton.
26 $\frac{1}{2}$	11	20 $\frac{3}{4}$	?	Do.
♀ 5 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{2}$	?	Do.



Head of Male Marco Polo's Sheep. From Mr. David T. Hanbury's specimen.

MARCO POLO'S SHEEP (*Ovis poli*).

In common with the following members of the genus *Ovis*, this splendid sheep has the transverse wrinklins of the horns well developed, and small glands present on the face. The horns of the adult male are characterised by their comparative slenderness and great length, forming a spiral of more than one complete circle, with the front angles typically well developed. The hind-quarters show a large amount of white, extending over the greater part of the thighs; and in winter the throat is furnished with a voluminous ruff of long white hairs, which disappears in summer. Height at shoulder about 4 feet, or perhaps rather less; weight of adult male about 22 stone.

Distribution.—Typically the plateau of the Pamirs in Central Asia, but represented by a closely allied race (*O. poli karelini*) in the Thian Shan range of Turkestan, in which the horns are generally somewhat shorter, and may have the front outer angle rounded off. This sheep was first definitely made known in England by

specimens obtained during the Second Yarkand Mission under the late Sir D. Forsyth; since which date it has been killed by Mr. St. George Littledale, Major C. S. Cumberland, Capt. H. Bower, Viscount de Poncins, and other sportsmen.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-75	16	54 $\frac{1}{2}$	Pamir	Field-Marshal Earl Roberts.
73	15	48	Little Pamir	The late Col. H. C. B. Tanner.
-71	15 $\frac{1}{2}$	53 $\frac{3}{4}$	Great Pamir	Viscount Edmond de Poncins.
70	14 $\frac{1}{2}$	45	Do.	H.M. The King.
70	17	52	Do.	H.H. the Maharajah of Cooch Behar.
69 $\frac{1}{2}$	15 $\frac{1}{4}$	56	?	Marquis of Lansdowne.
69 $\frac{1}{2}$	14 $\frac{1}{2}$	39	Tagdumbash	Sir Edmund G. Loder, Bart.
-68 $\frac{1}{2}$	15 $\frac{1}{4}$	45 $\frac{3}{4}$	Do.	Queen's Own Corps of Guides.
68 $\frac{1}{2}$	15	35 $\frac{3}{4}$	?	Lewis Flower.
68	17	43	Pamir	Major-Gen. Sir R. Pole Carew.
-68	16	52	?	Indian Museum.
-67 $\frac{3}{8}$	16	53 $\frac{3}{4}$	?	Indian Museum (Col. J. Biddulph).
-67	16	...	Thian Shan	H.H. the Maharaja of Travancore.
67	15 $\frac{1}{2}$	42 $\frac{1}{2}$	?	Duke of Westminster.
66 $\frac{7}{8}$	15 $\frac{5}{8}$	46	?	Sir Edmund G. Loder, Bart.
66 $\frac{7}{8}$	13 $\frac{7}{8}$	46 $\frac{1}{2}$	Valley between Little and Great Pamir	A. O. Hume.
66	15 $\frac{1}{4}$	44	Do.	British Museum (Hume Collection).
66	15 $\frac{3}{4}$	42	?	A. Leslie Renton.
65 $\frac{1}{2}$	16	53	Great Pamir (16,000 feet) .	British Museum (Col. T. E. Gordon).
-65	16	41	?	Dublin Museum.
65	16 $\frac{1}{2}$	49 $\frac{1}{2}$	?	Major C. F. Blane.
-65	...	...	?	The Empress of Russia.
64 $\frac{1}{2}$	16 $\frac{1}{2}$	46	Pamir	Col. C. C. Ellis.
64 $\frac{1}{4}$	16 $\frac{1}{2}$	41	Do.	W. Lawrence.
64 $\frac{1}{4}$	15 $\frac{1}{4}$	39	Do.	H. C. V. Hunter.
64	15 $\frac{1}{2}$	50	Little Pamir	Major R. P. Cobbold.
64	15	39	Do.	A. Ezra.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
64	15	49	?	Duke of Portland, K.G.
63 $\frac{3}{8}$	16 $\frac{1}{8}$	42 $\frac{1}{2}$	Pamir	Hon. Walter Rothschild.
63 $\frac{3}{8}$	15 $\frac{3}{8}$	46 $\frac{1}{4}$	Tagdumbash	Earl of Dunmore.
63	16	49 $\frac{1}{2}$	Little Pamir	Bachelors' Club (Major R. P. Cobbold).
62 $\frac{3}{4}$	16 $\frac{1}{4}$	51	Tagdumbash	Capt. T. W. Greenfield.
62 $\frac{1}{2}$	15	57	?	Sir Edmund G. Loder, Bart.
62	15 $\frac{1}{4}$	40	?	Hon. Charles Ellis.
61 $\frac{1}{2}$	15 $\frac{1}{2}$	46 $\frac{1}{4}$	Tagdumbash	E. L. Phelps.
60 $\frac{3}{4}$	15 $\frac{3}{4}$	46 $\frac{7}{8}$	Pamir	St. George Littledale.
60	15 $\frac{3}{4}$	46 $\frac{3}{4}$	Tagdumbash	Capt. T. W. Greenfield.
60	15 $\frac{1}{2}$	46	Do. . . .	P. Church.
-60	...	...	Do. . . .	Lieut.-Col. H. Bower.
-60	17	...	Do. . . .	H. Dauvergne.
-60	16	52	Do. . . .	H. Lennard.
60	15 $\frac{3}{4}$	43	Do. . . .	R. Hardcastle.
59 $\frac{1}{4}$	16	46	?	Capt. H. H. P. Deasy.
59	15 $\frac{1}{2}$	40	Tagdumbash	Lord Curzon.
59	16 $\frac{1}{4}$	47	?	Viscount Powerscourt.
59	15 $\frac{3}{4}$	41	?	Martyn Kennard.
59	14	42 $\frac{3}{4}$	Tagdumbash	David T. Hanbury.
57 $\frac{3}{4}$	15	46 $\frac{3}{4}$	Do. . . .	Major-General Sir Arthur Ellis, K.C.V.O.
57 $\frac{3}{4}$	14 $\frac{3}{4}$	50	Do. . . .	Reginald Beech.
57	15 $\frac{1}{4}$	42	Do. . . .	Hon. R. A. Ward.
56 $\frac{7}{8}$	15 $\frac{1}{8}$	35 $\frac{1}{2}$	Do. . . .	St. George Littledale.
56	15	44	Do. . . .	E. P. Tennant.
56	14	45 $\frac{3}{4}$	?	Major J. Manners Smith.
56	14 $\frac{1}{2}$	43	?	W. O. Bell-Irving.
55 $\frac{3}{4}$	15 $\frac{3}{4}$	43	?	J. Carr Saunders.
53 $\frac{1}{2}$	14 $\frac{3}{4}$	38 $\frac{3}{4}$	N. Pamir	R. Hayne.
49	15 $\frac{1}{2}$	38	Thian Shan	J. V. Phelps.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55 $\frac{5}{8}$	16 $\frac{1}{2}$	43	Pamir	Major C. S. Cumberland.
55	16	44	?	H.R.H. le Duc d'Orléans.
- ♀ 14.7	5.90	15.75	Great Pamir	Viscount Edmond de Poncins.
♀ 10 $\frac{1}{2}$	5 $\frac{1}{2}$	13 $\frac{1}{2}$	Tagdumbash	David T. Hanbury.

LITLEDALE'S SHEEP (*Ovis saiaensis*).

This sheep, of which there are two races, the typical smaller one, and the larger *O. s. littledalei* of the Ili Valley and part of Siberia, is in some respects intermediate between *poli* and *ammon*. It differs from both in having the face brown above and white on the muzzle. The horns are less finely ridged than those of *ammon* and form a longer spiral. In the larger Ili race the horns are much less "nipped in" below the eyes, and also farther away from the ears.

Distribution.—Typically from the Sair Mountains, Altai; the larger race from the Ili Valley, Thian Shan, and the Semipalatinsk Altai.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
62 $\frac{1}{4}$	19 $\frac{3}{4}$	38 $\frac{1}{4}$	Altai	St. George Littledale.
61 $\frac{1}{2}$	19 $\frac{1}{4}$	39 $\frac{1}{4}$	Do. . . .	British Museum (St. George Littledale).
59 $\frac{1}{2}$	19 $\frac{1}{2}$	38 $\frac{1}{4}$	Do. . . .	St. George Littledale.
49 $\frac{1}{2}$	16 $\frac{1}{4}$	25 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
46 $\frac{1}{4}$	14 $\frac{1}{4}$	27	Irtisch District . .	Hon. Walter Rothschild.
46	13 $\frac{1}{4}$	28	?	Rowland Ward.
40	14 $\frac{3}{8}$	29 $\frac{1}{2}$	Near Sairam Nor Lake	Lord Elphinstone.



WANTYPE

Skull and Horns of Male Siberian Argali.
From a specimen shot by Mr. St. George Littledale in the Altai.

SIBERIAN ARGALI (*Ovis ammon*).

Closely allied to Marco Polo's sheep, but distinguished by the thicker and less expanded horns, which often have the outer front angle much rounded off, and the wrinklins very fine. A more or less distinct white patch on the rump, not extending on to the thigh, which is dark-coloured like the back; no ruff on the throat, even in the long winter coat. In summer the coat of old males, which is very short, tends to become more or less light-coloured all over. Height at shoulder from about 45 inches to 4 feet; weight from about 250 to 350 lbs.

As in the Tibetan race, considerable individual variation may be noticed in the horns, some having the outer front angle much more developed than usual; it does not appear that these differences can be accounted for by age.

Distribution.—In former times apparently extending from the Baikal Mountains in the south of Eastern Siberia through Northern Mongolia to the Altai; now chiefly restricted to the two latter localities.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
62	19	38 $\frac{3}{4}$	Altai	H. J. Elwes.
60	20	41	Do.	Lord Elphinstone.
59 $\frac{1}{2}$	20	41 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
59	19	37 $\frac{1}{2}$	Do.	Ford G. Barclay.
56 $\frac{1}{2}$	18 $\frac{1}{2}$	33 $\frac{1}{2}$	Do.	Major C. S. Cumberland.
55	18	39	Do.	Prince E. Demidoff.
54 $\frac{3}{4}$	18 $\frac{3}{4}$	30	Do.	Major C. S. Cumberland.
54 $\frac{1}{2}$	19 $\frac{3}{4}$	33 $\frac{3}{4}$	Do.	Do.
53 $\frac{1}{2}$	21 $\frac{1}{4}$	33 $\frac{1}{2}$	Do.	Duke of Bedford, K.G.
53 $\frac{1}{2}$	19	22	Do.	St. George Littledale.
53	18	39	Do.	W. E. Pease.
52 $\frac{1}{2}$	19 $\frac{3}{4}$	33	Do.	Prince E. Demidoff.
52	21	30 $\frac{1}{2}$	Do.	P. B. Vander-Byl.
51	19 $\frac{1}{4}$	33	Do.	St. George Littledale.
50	19 $\frac{1}{2}$	27 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
-50	19 $\frac{1}{2}$	36	Do.	Dr. Albert von Stephani.
49 $\frac{1}{2}$	20 $\frac{1}{4}$	25	Do.	St. George Littledale.
47 $\frac{1}{2}$	18 $\frac{3}{4}$	31	Do.	R. Hayne.
45 $\frac{1}{2}$	20	27 $\frac{1}{4}$	Do.	Prince E. Demidoff.
40	16	33	Do.	Princess Demidoff.
♀ 26	7 $\frac{1}{4}$	23 $\frac{3}{4}$	Do.	Hon. Walter Rothschild.



Head of Male Tibetan Argali.

TIBETAN ARGALI (*Ovis ammon hodgsoni*).

Chiefly distinguished from the Siberian argali by the development of a distinct white ruff on the throat of the males, at least in the winter coat, and also by the less degree of lateral expansion of the horns, which do not form more than a single complete circle, and are generally broken at the tips. The wrinkles on the horns are perhaps somewhat less prominent, and the outer front angle is frequently well developed.

The height at the shoulder is perhaps rather less than in the typical argali, of which this sheep is best regarded as a local race. A specimen measured by Lieut.-Col. Greenaway was 76 inches from the nose to the tip of the tail, and the weight about 212 lbs. In another male, whose age was estimated at 10 years, the height at the shoulder was 43 inches, the girth 50 inches, and the weight 205 lbs. (P. H. G. Powell-Cotton).

Distribution.—The plateau of Tibet, from Northern Ladak to the districts north of Sikkim, and northwards to the Kuenlun; eastern limits unknown.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
57	18 $\frac{3}{4}$	29	Tibet	Arnold Pike.
50 $\frac{1}{2}$	18 $\frac{1}{4}$	19	Pangong Lake . .	Sir Edmund G. Loder, Bart.
-50	17	...	Tibet	W. H. Lane.
-48 $\frac{1}{2}$	19	...	Do.	E. Howard Brooke.
-48	18 $\frac{1}{2}$	...	Do.	Major T. K. E. Johnston.
48	16	23	Rudok	Major G. A. L. Carew.
48	18 $\frac{1}{2}$	20	Ladak	Major H. C. Morland.
48	18	31	Do.	Lieut.-Col. Hon. A. Dalzell.
-47	17	...	Do.	Otho Shaw.
46 $\frac{1}{2}$	19 $\frac{3}{4}$	20	Do.	A. O. Hume.
-46 $\frac{1}{2}$	16 $\frac{1}{2}$	21	Do.	P. H. G. Powell-Cotton.
46 $\frac{1}{2}$	16 $\frac{3}{4}$	...	Do.	Major H. M. Biddulph.
-46	19	...	?	Major C. S. Cumberland.
46	16	17	?	Hon. R. A. Ward.
45 $\frac{1}{2}$	16 $\frac{1}{4}$	17	?	Duke of Teck.
45	17	16	Ladak	J. V. Phelps.
-45	...	...	?	Lucknow Museum.
-44 $\frac{1}{2}$	17	21 $\frac{7}{8}$	Ladak	A. E. Leatham.
44	16	17 $\frac{1}{2}$	Do.	Duke of Bedford.
44	16	17 $\frac{1}{2}$	Do.	W. R. Lawrence.
-44	18	...	Do.	H.H. the Maharaja of Travancore.
43	17	19	Do.	Comte de Jancourt.
42 $\frac{1}{2}$	16 $\frac{1}{2}$	19	?	A. O. Hume.
42 $\frac{1}{2}$	17	...	?	Lieut.-Col. T. Greenaway.
-42 $\frac{1}{2}$	16	15	Ladak	Major H. M. Biddulph.
42 $\frac{1}{2}$	16	18	Do.	Brit. Museum (Hume Collection.)
42 $\frac{1}{2}$	15 $\frac{1}{4}$	...	?	J. Carr Saunders.
42 $\frac{3}{8}$	16 $\frac{1}{4}$	20	Tibet	H.R.H. the Duke of Saxe-Coburg and Gotha.

MONGOLIAN ARGALI (*Ovis ammon jubata*).

Nearly allied to the Tibetan race, having a distinct yellowish-white throat ruff and generally similar horns, but, in some cases at least, the outer front angles of the latter much rounded off. The white on the buttocks and hinder surface more abundant and purer in colour.

Distribution.—Eastern Mongolia to the north of Pekin.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
44 $\frac{3}{4}$	16 $\frac{1}{2}$	23	Manchuria . . .	H.R.H. Henri de Bourbon, Comte de Bardi.



Head of Male Shapu.

SHAPU or URIAL (*Ovis vignei*).

A much smaller sheep than either of the Asiatic argalis, with comparatively slender and well-wrinkled horns of considerable length, which when fully developed curve forwards along the sides of the face; the males with a more or less strongly developed whitish ruff on the throat. General colour varying from rufous brown to gray in summer, with the chest, under-parts, and portions of the legs white, and sometimes blackish "points." Females with small horns. Height at shoulder about 32 inches; weight about 120 lbs.

Distribution.—From Ladak and Zanskar to Russian Turkestan, Afghanistan, part of the Caucasus, Baluchistan, Southern Persia, the North-West Frontier of India, and the Punjab Salt-Range. Several local races, two of which probably intergrade in the Indus valley, are recognised. First, the typical urin of Astor, the sha or shapu of Ladak (*O. vignei typica*); secondly, the smaller urial (*O. vignei cycloceros*) of the Punjab, Afghanistan, and Baluchistan, in which the colour is redder, the ruff more developed, and the front angles of the horns often show a knotted keel; and thirdly, the Kopet Dagh Urial (*O. v. arkal*). It is possible the Persian form, in which the ruff is said to be but little developed, may form a fourth race.

(a) SHAPU (*Ovis vignei typica*).

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
39	11 $\frac{1}{4}$	15 $\frac{1}{2}$	?	Col. Sir H. S. Rawlinson, Bart.
38 $\frac{5}{8}$	12 $\frac{1}{2}$	11 $\frac{1}{4}$	?	J. Carr Saunders.
38 $\frac{1}{2}$	11 $\frac{1}{4}$	8 $\frac{1}{2}$	Near Leh . . .	E. L. Phelps.
36 $\frac{1}{4}$	11 $\frac{1}{2}$	4 $\frac{1}{4}$	Do. . . .	A. O. Hume, C.B.
-36 $\frac{1}{4}$	11 $\frac{3}{4}$	...	Do. . . .	Lieut.-Col. A. E. Ward.
36 $\frac{1}{4}$	10 $\frac{7}{8}$	11 $\frac{5}{8}$	Baltistan . . .	Major T. A. Salt.
34 $\frac{3}{8}$	11	...	?	East India Club.
-33 $\frac{3}{4}$	12 $\frac{1}{4}$	13	Ladak	P. H. G. Powell-Cotton.
33 $\frac{1}{4}$	12	12	Do. . . .	Arnold Pike.
-33 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{5}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
33	10 $\frac{1}{2}$	15	Do. . . .	Capt. F. W. H. Walshe.
32 $\frac{1}{4}$	10	11	Do. . . .	D. L. R. Lorimer.
32 $\frac{1}{4}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$	Do. . . .	Sir Victor Brooke's Collection.
-32	11	9 $\frac{1}{4}$	Do. . . .	Col. J. Biddulph.
-32	...	...	Do. . . .	Capt. T. S. Johnson.
31 $\frac{3}{4}$	10 $\frac{1}{4}$	7	Do. . . .	Col. F. C. Lister-Kay.
31 $\frac{1}{2}$	10 $\frac{1}{4}$	13 $\frac{1}{2}$	Do. . . .	B. H. Shaw-Stewart.
-31	11	...	Do. . . .	J. D. Cobbold.
30 $\frac{1}{2}$	8 $\frac{1}{2}$	19	Do. . . .	Capt. K. Dingwall.
30	11 $\frac{3}{4}$	16	?	Hon. Walter Rothschild.
-30	...	...	Ladak	Otho Shaw.
-30	11	...	?	H.H. the Maharaja of Travancore.
-30	...	...	?	Lucknow Museum.
29 $\frac{7}{8}$	10 $\frac{3}{8}$	...	?	H. C. V. Hunter.
29 $\frac{1}{2}$	10 $\frac{1}{2}$	13	Ladak	J. V. Phelps.
29	11 $\frac{1}{8}$	...	?	Sir Robert Harvey, Bart.
29	11	9 $\frac{1}{4}$	Ladak, W. Indus . .	A. Leslie Renton.
28 $\frac{1}{4}$	10 $\frac{3}{8}$	20	?	P. Church.
28	10 $\frac{3}{4}$	13	?	B. Vincent.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27½	11½	18½	?	Martyn Kennard.
-27½	10	...	West Ladak . . .	Capt. F. E. S. Adair.

(b) PUNJAB URIAL (*Ovis vignei cycloceros*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39½	12½	14½	Russian Turkestan .	Prince E. Demidoff.
39½	10¾	18½	Punjab . . .	Major F. H. Taylor. (See illustration.)
38¾	9.75	9.5	Chita Oapar Range, near Attock	Royal Artillery Mess, Woolwich (Lieut.-Col. C. F. Massey).
-38½	...	...	Jouaki Land . . .	Royal Artillery Mess at Attock.
-37	9	...	?	The late Major J. C. Shirres.
36¾	9	9	Hills north-west of Peshawur	Mess of 60th Rifles (Lord Walter Fitzgerald).
36	10½	15	Persia . . .	Hon. Walter Rothschild.
35½	10½	16	Gulran, Afghanistan .	British Museum (Dr. J. Aitchison).
35½	10½	17¾	Russian Turkestan .	Prince E. Demidoff.
-35½	10½	20¾	?	Mess, 21st Punjab Infantry.
35½	10½	9½	Punjab . . .	Major F. H. Taylor.
-35	11	14	Near Cabul . . .	Major J. W. M. Cotton.
34½	11	12	Russian Turkestan .	St. George Littledale.
33½	9½	12½	Salt-Range . . .	A. O. Hume.
33½	9½	8¾	?	Capt. R. L. Tottenham.
33½	11	8¾	Russian Turkestan .	Prince P. Demidoff.
32½	10	11½	?	Sir Victor Brooke's Collection.
32¾	7¾	12	Punjab . . .	G. Blois Johnson.
32½	10	11½	?	British Museum (Hume Collection).
31¾	9	16½	Near Daghestan . .	R. Graham.
31½	9½	16¾	Salt-Range . . .	Capt. H. W. Codrington.
31½	12	10½	?	Major J. Manners Smith.
-31	10½	...	Punjab . . .	Major-General A. A. A. Kinloch.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
31	9 $\frac{3}{8}$	14 $\frac{1}{2}$	Punjab . . .	Lieut.-Col. R. H. Rattray.
30 $\frac{7}{8}$	9 $\frac{7}{8}$	20 $\frac{1}{8}$	Salt-Range . .	Sir Victor Brooke's Collection.
30 $\frac{3}{4}$	11 $\frac{3}{4}$	11 $\frac{1}{4}$	Do.	Col. J. Biddulph.
-30	8 $\frac{1}{2}$	6 $\frac{1}{2}$	? . . . .	Dublin Museum.



Head of Male Punjab Urial. Major F. H. Taylor's specimen.

The following specimens belong to the so-called *O. blanfordi*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{2}$	10 $\frac{1}{4}$	11	Haji Khan, Kelat, 3000 ft.	A. O. Hume.
34 $\frac{1}{2}$	8 $\frac{1}{4}$	16	Sind	L. Napier.
31 $\frac{3}{8}$	9 $\frac{3}{8}$	13 $\frac{3}{4}$	Do.	Brit. Museum (Hume Collection).
28 $\frac{1}{2}$	9	10	Baluchistan	Col. J. Biddulph.
-25 $\frac{1}{2}$	9 $\frac{1}{4}$	10 $\frac{3}{4}$	Do.	Lieut.-Col. L. L. Fenton.

ARMENIAN MUFLON (*Ovis orientalis*).

The Asiatic muflon, of which this is the typical form, differs from all the preceding species by the absence of horns in the females; the horns of the males being not unlike those of the urial, but curving backwards, so that their points are situated behind the neck instead of beneath the eyes. General colour of upper-parts some shade of yellow or foxy red; the under-parts and lower portions of the legs white. Height at shoulder about 2 feet 9 inches.

Distribution.—The mountains of Armenia, Eastern Persia, and Asia Minor.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40 $\frac{1}{4}$	10 $\frac{1}{2}$	5 $\frac{1}{2}$	?	British Museum (W. Burchart Barker).
36 $\frac{1}{4}$	10 $\frac{3}{8}$	5 $\frac{3}{4}$	?	British Museum.
30 $\frac{1}{2}$	10 $\frac{5}{8}$	18	?	Sir Victor Brooke's Collection.
-29 $\frac{3}{4}$	9 $\frac{3}{4}$	9 $\frac{1}{2}$	Axylon	E. N. Buxton.
-26 $\frac{1}{10}$	8 $\frac{1}{2}$	12 $\frac{1}{8}$	Cilician Taurus . . .	C. G. Danford.
24 $\frac{1}{2}$	9 $\frac{1}{4}$	11 $\frac{1}{2}$	Persian Frontier . . .	Prince E. Demidoff.
24 $\frac{1}{2}$	9	16 $\frac{3}{8}$	W. Asia Minor	C. G. R. Lee.
24	9 $\frac{5}{8}$	17	Asia Minor	Col. J. Biddulph.
23 $\frac{3}{4}$	9 $\frac{1}{2}$	13 $\frac{1}{2}$	Persian Frontier . . .	Prince E. Demidoff.
21	9	14 $\frac{3}{8}$	Asia Minor	H. O. Whittall.



Head of Male Cyprian Muflon. (From Biddulph, *Proc. Zool. Soc.* 1884.)

CYPRIAN MUFLON (*Ovis orientalis ophion*).

A small local race of the preceding distinguished by certain differences in coloration, and the complete rounding-off of the front outer angle of the horns of the male. This is the smallest of the wild sheep, standing only about 28 inches at the shoulder. The horns closely resemble those of the Armenian race in general characters, but are less massive, and curve gradually from the base, instead of diverging nearly straight outwards, as is generally the case in the latter. Weight about 70 lbs.

Distribution.—The Troödos Mountains of Cyprus.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
27	7½	8½	Hon. Walter Rothschild.
25	8	15¾	H. Williamson.
23½	8.15	12.20	Col. J. Biddulph.
23	7	5¾	British Museum.
22½	7½	6	British Museum (Gen. Sir R. Biddulph).
-22½	...	5½	Sir Edmund G. Loder, Bart.
22¼	8	12¾	Sir Victor Brooke's Collection.
-17½	8	1½	Dublin Museum.
16	7½	16½	Cambridge Museum.



Head of Male European Muflon.
From a specimen in the British Museum, shot by Mr. F. G. Barclay.

EUROPEAN MUFLON (*Ovis musimon*).

The large light-coloured saddle on the otherwise dark summer coat of the rams and the form of the horns are so distinctive of the species that nothing in the way of description need be attempted in this place. The horns of the rams curve forwards so as to have their tips below the eyes, and are comparatively massive, with the wrinkles of a type somewhat different from that obtaining in the Armenian sheep. Two races appear recognisable, in one of which the ewes are hornless, while in the other they have short horns. Height at shoulder about 27 inches.

Distribution.—At the present day the islands of Sardinia and Corsica.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
38½	8	11½	Sardinia	Duke of Bedford.
34½	8½	16¾	Do.	W. Moncreiffe.
33½	9	9	Do.	M. Egerton.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
32 $\frac{1}{4}$	9	9	Sardinia . . .	C. Sloane Stanley.
31	8 $\frac{1}{4}$	10	Do. . . .	C. G. R. Lee.
30 $\frac{1}{4}$	8 $\frac{5}{8}$	14	Do. . . .	Rhys Williams.
29 $\frac{3}{4}$	8	12 $\frac{1}{2}$	Do. . . .	C. Sloane Stanley.
29 $\frac{3}{4}$	8	...	Do. . . .	J. D. Cobbold.
29 $\frac{5}{8}$	8 $\frac{3}{4}$	11	Do. . . .	Hon. R. A. Ward.
28 $\frac{7}{8}$	8 $\frac{1}{8}$	21	Do. . . .	E. N. Buxton.
28 $\frac{3}{4}$	9	10	Do. . . .	F. G. Barclay.
28 $\frac{1}{4}$	9 $\frac{5}{8}$	9 $\frac{3}{8}$	Do. . . .	Edinburgh Museum.
27 $\frac{7}{8}$	8 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	W. E. Pease.
27 $\frac{5}{8}$	8 $\frac{3}{4}$	9	Do. . . .	Prince E. Demidoff.
27	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
27	8 $\frac{1}{2}$	10	Do. . . .	British Museum.

DOMESTICATED SHEEP (*Ovis aries*).

The history and ancestry of the various breeds of domesticated sheep are lost in the mists of antiquity, and naturalists are unable to point to the wild stock from which any or all of them are derived. This is the more to be regretted, seeing that the Swedish breed is the type of the genus *Ovis*. Most domesticated breeds differ from wild sheep by the woolly nature of their coat ; but since hairy tame sheep are met with in several uncivilised countries, this point of difference is of comparatively little importance. More weight has been attached to the great length of the tail, which is much longer than even that of the arui ; and, as mentioned above, that species is almost certainly not the father of the domesticated sheep. There is, however, some degree of probability that the long tails of the domesticated breeds are due to a kind of degeneration. And if this be really the case, their ancestry might be looked for among the mufions or urial or some allied extinct form, since the horns of most breeds approximate to the muflon type. In many breeds, Dorsetshire, for example, the females are horned ; and four, or even five, horns occur in the males of certain breeds. Some eastern sheep, like the Wallachian, have departed from the muflon type by the development of upright corkscrew-horns comparable with those of the markhor or kudu.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
45½	9	15	Scotland . . .	J. A. H. Drought.
39½	8½	21	?	H. E. Surtees.
37	8½	20	Loch Awe, N.B. .	H. Murray.
35½	8	16½	?	Sir Victor Brooke's Collection.
35½	8½	24	Dorset . . .	Hon. Walter Rothschild.
33	11	22½	Yarkand . . .	British Museum (Hume Collec- tion).
28½	8	21½	Scotland . . .	Rowland Ward.
22½	9½	20½	Yarkand . . .	British Museum (Hume Collec- tion).
22½	9½	22½	Do. . . .	Do.
18	8½	16½	Fezzan . . .	British Museum.
10½	6	9	Faroe Islands . .	R. J. Cuninghame.

Many-horned Breeds.

Length on outside curves.	Circum- ference.	Tip to Tip.	Number of Horns.	Owner.
20½...16	6 ...4½	15½	Four	The late Sir H. B. Meux, Bart.
19½...14	6½...4½	21 ...16	Do.	P. C. Millbank.
19½...14½	8 ...5½	27 ... 9½	Do.	British Museum.
19 ...14	7½...5½	24 ... 5½	...	R. J. Cuninghame.
17½...14½	7½...4½	4½... 6½	Four	British Museum (Hume Collection).
17 ...11½	6½...5	6 ... 8½	Do.	British Museum.

The following belong to the Wallachian breed :—

Length on the curve.	Length in a straight line.	Girth.	Tip to Tip.	Owner.
33	17½	7½	19½	H.R.H. le Duc d'Orléans.
32	24	7½	38	Do.
29½	23½	8	40½	British Museum.
♀ 12½	10½	4½	17½	Do.



Head of Bull Musk-Ox.

MUSK - OX (*Ovibos moschatus*).

In spite of its name, this Arctic ruminant has no near affinity with the members of the ox tribe, the cheek-teeth being more like those of the sheep and goats, the muzzle, except for a small strip between the nostrils, hairy, and the tail reduced to a mere stump concealed among the long hair of the hind-quarters. On the other hand, the resemblance to the sheep is not very close, the horns, which in old males nearly meet in the middle line of the forehead, being of a totally different form and structure, and the skull likewise very distinct. In the males the horns are much flattened and expanded at the bases, after which they are bent suddenly down behind the eyes, to curve upwards again at the tips. In the females they are much smaller, less expanded, and not approximated at their bases. In both sexes their texture is coarse and fibrous, and their colour yellow. The long coat of dark brown hair depending from the back and sides like a mantle affords an adequate protection against the rigors of an Arctic winter ; and the broad spreading hoofs, with hair on their under-surface, give a firm

foothold on snow and ice. Two races are known—the typical Canadian and the Greenland (*O. moschatus wardi*). The latter is characterised by the presence of a certain amount of white on the forehead and the smaller expansion of the horns. Height at shoulder about 4 feet. Weight of one weighed in parts, 579 lbs. (D. T. Hanbury).

Distribution.—Arctic America, approximately north and east of a line drawn from the mouth of the Mackenzie River to Fort Churchill on Hudson Bay, Greenland, and Grinnell-land, in lat. $32^{\circ} 27'$; approximate southern limit lat. 40° N.

Length on outside curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
$-30\frac{1}{4}$	$13\frac{3}{4}$	$30\frac{1}{4}$	?	W. W. Hart.
$27\frac{3}{4}$	10	$27\frac{1}{2}$	Barren Grounds of Northern Canada	David T. Hanbury.
$-27\frac{1}{2}$	$11\frac{3}{4}$	23	Do.	Caspar Whitney.
$27\frac{1}{4}$	$12\frac{1}{2}$	27	Do.	Earl of Lonsdale.
$-27\frac{1}{4}$	$10\frac{5}{8}$	$27\frac{1}{2}$	Do.	Imperial Museum, Vienna.
$26\frac{7}{8}$	11	27	Do.	Warburton Pike.
$26\frac{3}{4}$	$12\frac{3}{8}$	...	North America	British Museum (J. Rae).
$26\frac{1}{4}$	$13\frac{5}{8}$	$27\frac{5}{8}$	Do.	British Museum.
$-25\frac{5}{8}$	10	25	Do.	Dr. Albert von Stephani.
$24\frac{3}{4}$	11	$25\frac{1}{2}$	Barren Grounds	Warburton Pike.
$24\frac{1}{4}$	$7\frac{1}{2}$	19	Do.	J. Talbot Clifton.
$24\frac{1}{4}$	$10\frac{1}{2}$	26	Do.	Hon. Walter Rothschild.
24	$9\frac{3}{4}$	$23\frac{3}{8}$	North America	Sir Edmund G. Loder, Bart.
-24	...	25	?	Major W. Anstruther Thomson.
$23\frac{1}{4}$	6	$22\frac{3}{4}$	?	A. Barclay Walker.
$-21\frac{1}{2}$	9	27	?	Dublin Museum.
$-♀ 21\frac{1}{8}$	$4\frac{3}{4}$	$20\frac{5}{8}$	?	Imperial Museum, Vienna.
$♀ 18\frac{5}{8}$	$4\frac{1}{2}$	...	North America	British Museum (A. G. Dallas)
$♀ 17$	$4\frac{5}{8}$	$9\frac{7}{8}$	Do.	Dr. Albert von Stephani.

Ovibos moschatus wardi.

$24\frac{3}{4}$	$8\frac{1}{4}$	$22\frac{1}{2}$	Greenland	Rowland Ward.
$24\frac{1}{2}$	$7\frac{1}{4}$	27	Do.	Do.



Horns of Male Cape Buffalo (Mr. F. H. Barber's specimen).

CAPE BUFFALO (*Bos caffer*).

Gādārs of the Gallas.

Inyati of the Swazis and Zulus.

Mboa and *Nyati* in the Chilala and
Chibisa countries.

Mbogo and *Nyati* of the Swahilis.

Nadi in Barotsiland and Ngami-
land.

Nari of the Basutos.

Among the distinctive features of this fine species may be noted the enormous helmet-like mass formed by the closely approximated bases of the horns in old bulls, the backward inclination and comparatively slight angulation of the horns themselves, the shortness of the face, and the great width and size of the heavily fringed and flapping ears. In colour both the skin and the sparse hairs with which it is clothed are for the most part jetty black; the hairs themselves being directed uniformly backwards from the nape to the rump. Height at shoulder about five feet.

Distribution.—Southern Africa from the Cape to the southern bank of the Congo on the west side, and approximately to the neighbourhood of the Victoria Nyanza on the east side of the continent. Northwards of this it not improbably gradually passes into the Abyssinian buffalo. Except on the Zambesi, Chobi, and some neighbouring rivers, buffaloes have now become very scarce in South Africa; but between Umtali and the east coast at Beira, and also from the latter station to the mouth of the Zambesi, they are to be met with in vast herds, and a few years ago existed in countless numbers. Here they are much protected by the unhealthy nature of the country, which is deadly to Europeans, except

between the end of May and November. Save for a few protected herds in the Addo bush, the Knysna and Zitzikamma forests, and thickets of the Fish and Sunday rivers, the species has long since been exterminated in the Cape. It is even rare and local in British East Africa, where, as in other districts on the eastern side of the continent, the rinderpest some years ago played havoc with the herds.

Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
49	44½	40½	11½	Limpopo . .	Sir Richard Glyn, Bart.
-48½	44½	36	10	Chiromo, B.C.A. .	H. C. Macdonald.
48½	43	30½	11½	Sabi River . .	F. H. Barber. (See illustration.)
-48	43	...	...	Pungwe . .	F. Lean.
-47½	43½	39½	13	? . .	P. C. Keytel.
-47½	...	...	...	? . .	C. H. Townsend.
47	40½	...	12½	East Africa . .	F. J. Jackson.
...	40½	26	...	Do. . .	Prince Boris Czetwertynski.
46½	44½	37½	6½	Pungwe . .	C. M. Swire.
45½	41	27½	8	Do. . .	Julius Jeppe.
45½	41½	37½	...	South Africa . .	British Museum.
45½	40	28½	12	Nyasaland . .	F. Vaughan Kirby.
45½	40	27½	11	East Africa . .	Capt. D. H. Macdonell.
45½	...	...	11½	Kilimanjaro . .	H. C. V. Hunter.
45½	40½	32½	9	Tana River . .	Major H. de Préé.
-45	39½	36½	14	East Africa . .	Count Scheibler.
-45	...	...	...	Nyasaland . .	S. Pulley.
44½	39½	27½	11½	East Africa . .	Sir Robert Harvey, Bart.
44½	39½	29	12	Pungwe . .	F. S. Staples.
44½	39½	29	15	Chobe River . .	F. C. Selous.
44½	...	37½	12	East Africa . .	F. Charrington.
44½	39	31½	10	South Africa . .	J. B. Taylor.
44	40½	37½	12	East Africa . .	Capt. R. A. J. Montgomerie.
-44	40	...	11½	South Africa . .	J. Lamont.
-44	40	30½	11½	Angola . .	E. P. Cooper.
-44	37½	14	...	Chiringoma, P.E.A.	F. Vaughan Kirby.
43½	37½	26½	12½	East Africa . .	Hon. Walter Rothschild.

Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
43½	38½	25½	9	Pungwe . . .	H. R. Holden.
43½	38½	24½	13½	South Africa . .	Sir John Willoughby, Bart.
43	38½	36	11	N.W. Rhodesia . .	Col. C. Harding.
43	37½	29¾	14	South Africa . .	C. D. Rudd.
43	38	30½	11	Lake Ngami . .	Capt. J. P. Grenfell.
42¾	38	33¾	9¾	East Africa . .	E. J. L. Berkeley.
42½	39¾	40	8½	Do. . .	Prince P. Demidoff.
42½	39½	40½	11¾	Do. . .	B. Eastwood.
-42½	36½	29	14½	E.C. Africa . .	James J. Harrison.
42¾	36¾	29½	12½	?	Sir Victor Brooke's Collection.
42	38	35½	9	East Africa . .	Lord Delamere.
42	37¾	26¼	11	Pungwe . . .	Capt. F. H. Lehmann.
42	37	30¼	10¼	Barotsiland . .	E. D. Scott.
-42	36	19	16	?	Mr. Justice Hopley.
-42	41	...	9½	East Africa . .	Major E. G. Harrison.
41½	37¾	34½	10	Pungwe . . .	R. H. Venables-Kyrke.
41½	36¾	28	...	South Africa . .	British Museum.
41	35½	24¾	16½	Do. . .	F. C. Selous.
41	36¾	37	11	Zambesia . .	Comdr. A. T. Hunt, R.N.
41	36½	26½	9½	Pungwe . . .	Major Lord Douglas Compton.
-40¾	35	19¾	13½	Do. . .	Count E. Hoyos.
40½	36¾	25½	9½	Do. . .	Marquis of Hamilton.
-40½	36	35	15	South Africa . .	A. Ohlsson.
♀ 40	35½	26½	7	Do. . .	F. C. Selous.
40	35	21¼	10	Matabililand . .	Major James Grant.
40	34¾	21¾	8	Pungwe . . .	C. C. Gouldsmith.
39¾	34½	9½	14	Do. . .	Capt. G. L. Bonham.
39½	35¾	29	9	Do. . .	F. W. Belt.
39.12	37	36.11	12	British East Africa .	Prince Henry of Liechtenstein.
-♀ 38½	33¾	27	6¼	?	P. C. Keytel.



Skull and Horns of Male Abyssinian Buffalo.

ABYSSINIAN BUFFALO (*Bos caffer æquinoctialis*).

A smaller animal than the last (height at shoulder about 4 feet), with the general colour blackish or tawny brown, tinged locally with rufous, and tending to grayish on the legs. Horns smaller, much more flattened at the bases, where they are more widely separated, and in some, although not all, cases retreating less markedly behind the plane of the eyes. The fact that in East African specimens of the Cape buffalo the horns are usually less rugged than in more southern examples, tends to confirm the view that the present animal should be regarded as a variety rather than as a species.

Distribution.—From Abyssinia and southern Somaliland through the Egyptian Sudan for a considerable distance up the White Nile; but the southern limits, if definable, not yet determined.

Greatest Width. Outside.	Width. Inside.	Tip to Tip.	Width of Palm.	Locality.	Owner.
44	42½	43	8½	White Nile . .	P. Niedieck.
40	37	32	11½	Abyssinia . .	E. Lort-Phillips.
38½	34½	32½	8¾	White Nile . .	R. McD. Hawker.
38	34½	28¾	7¾	Do. . .	G. H. Cheetham.
—37½	34¾	34½	8¾	Upper Baséland .	J. Menges.
36½	31½	24½	8½	White Nile . .	Count E. Hoyos.

Greatest Outside	Width. Inside.	Tip to Tip.	Width of Palm.	Locality.	Owner.
36½	33	30½	9½	Sudan . . .	Lieut.-Col. A. Colville.
36¼	32	22⅝	8½	White Nile . .	H. E. Allen.
-36	32¼	27	8¼	Sudan . . .	Prince Henry of Liechtenstein.
36	29	24	...	Mount Elgon, East Africa	E. Gedge.
35½	31⅜	28¼	8¼	White Nile . .	E. N. Buxton.
35½	32½	31¼	7¾	Do. . .	S. H. Whitbread.
-35	31	29	10	Sudan . . .	Sir W. Gordon Cumming, Bart.
-34¾	30½	26⅝	9⅝	Do. . .	Prince Henry of Liechtenstein.
34½	29½	23⅝	7½	White Nile . .	C. Liddell.
33	28⅜	23½	8¼	Do. . .	Count C. Hoyos.
33	27½	18⅝	9½	Do. . .	H. F. Buxton.
32¾	29¼	26¼	8½	Do. . .	C. Adeane.
♀ 32½	29⅝	24½	5¼	Do. . .	H. Cookson.
31¾	28¼	25⅝	8½	Settite River . .	Col. Ralph Vivian.
31½	26½	21¼	9¼	Bogosland . .	G. P. V. Aylmer and W. D. James.
31½	26⅜	27	8½	Sudan . . .	Prince Colloredo Mannsfeld.
31⅝	26⅞	24⅝	...	Bogosland . .	British Museum.
31	28½	21¾	11	Abyssinia . .	Sir Edmund G. Loder, Bart.
31	26½	18⅜	8	Sudan . . .	Col. St. G. C. Henry.
-30¾	26⅝	20¼	10¼	Settite River . .	Count T. Palffy.
30½	23	20½	8½	Sudan . . .	Lieut.-Col. Hon. W. Coke.
...	23	...	13½	Somaliland . .	A. E. Butter.



Horns of old Male Senegambian Buffalo, from the type specimen in the British Museum.

SMALLER AFRICAN BUFFALOES.

Bona of the Hausas.

Lake Tchad Buffalo (*Bos caffer brachyceros*).

Senegambian Buffalo (*Bos caffer planiceros*).

Dwarf Congo Buffalo (*Bos caffer nanus*).

Despite the enormous differences, alike in size, colour, and the form of the horns, between the little red buffalo of the Congo and its gigantic black cousin of the Cape, such a gradual and apparently complete transition can be traced from the one type to the other, that both seem local modifications of one very variable animal. In the dwarf buffalo of the Congo the colour of the hair is red or yellow, the ears are fringed with very long hair, and the horns are much flattened at the base, with long smooth tips directed upwards. This type may be traced, with some modifications, to the Gaboon and Gambia; but in the interior of Senegambia it apparently passes into the larger brown buffalo, with more laterally expanded and recurved horns, known as *B. caffer planiceros*. And this latter is, in its turn, very close to the Abyssinian buffalo (*B. caffer æquinotialis*) of East Central Africa, which is nearly allied to the typical Cape form. Another type is indicated by the Lake Tchad buffalo (*B. caffer brachyceros*), first discovered by Denham and Clapperton. In height the Congo dwarf buffalo only reaches some 42 inches at the shoulder.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
23½	15	10	Gold Coast . . .	Major G. S. C. Jenkinson.
23	16½	8½	Nigeria . . .	Julius Jeppe.
22¾	16½	12	Ashanti . . .	C. Beddington.
-21¾	15¾	4	Nigeria . . .	Capt. C. A. Wilding.
21½	12¾	2¼	West Africa . . .	British Museum.
21	15	9½	Nigeria . . .	A. Ohlsson.
21	17½	16½	Do. . .	Capt. J. F. Loder-Symonds.
20½	16½	10	Do. . .	Capt. D. F. MacCarthy Morrogh.
19	10	...	Lake Chad . . .	Hon. Walter Rothschild.
18¾	11½	3½	Nigeria . . .	W. H. Broun.
18½	12	6¾	Gambia . . .	H. C. Goddard.
18¼	10¾	5½	Central Africa . . .	British Museum (Capt. Denham and Col. Clapperton).
-18¼	15	11¼	?	P. C. Keytel.
18	16½	17½	Victoria Island, Lower Niger	Capt. R. H. Monck-Mason.
17½	10	4½	Gambia . . .	Sir Edmund G. Loder, Bart.
17	12	14½	Nigeria . . .	Capt. P. A. Clive.
16¾	10½	6½	Jebba, Nigeria . . .	Major A. H. Festing.
16½	13½	15	Niger . . .	Capt. H. A. Porter.
15¾	11	9½	Nigeria . . .	Sir Edmund G. Loder, Bart.
15½	11½	11	Do. . .	Capt. J. K. Cochrane.
15	6½ ¹	14	Do. . .	Lieut.-Col. A. J. Arnold.
♀ 13	10½	10½	Do. . .	Julius Jeppe.
♀ 11½	9½	...	Lokoja . . .	British Museum (Lieut.-Col. A. J. Arnold).
♀ 11	8½	10	West Africa . . .	Sir Edmund G. Loder, Bart.
♀ 9½	7¾	8½	Do. . .	Hon. Walter Rothschild.

¹ Width of palm.

Skull and Horns of Congo Buffalo, from Lieut.-Col. A. J. Arnold's specimen.



Head of Male Indian Buffalo. Shot by the Maharajah of Cooch Behar.

INDIAN BUFFALO or ARNA (*Bos bubalis*).

No one is the least likely to confuse this animal with the Cape species. Both belong, indeed, to the same group of the genus *Bos*, and have the same rounded upper portion of the head and angulated horns. In the Indian species, however, the head is much longer, the ears are narrower and less heavily haired, and the horns of the male are widely separated on the forehead, and totally different in form. Two types of horns may be recognised, one very massive, and curving regularly up from each side of the head in a subcircular manner; the other much slenderer, though often quite as long, directed for the greater part of their length almost straight out from the head, and always with a wider spread. Height at shoulder about 6 feet 2 inches; girth behind shoulder, 10 feet 8 inches. In a bull shot by the Maharajah of Cooch Behar the length from the nose to the tip of the tail was 14 feet 2 inches, and to the base of the tail 11 feet; the maximum girth being 10 feet 8 inches, and the weight of the head, when cut off, 158 lbs.

Distribution.—Typically India, where the range includes the plains of the Bramaputra and Ganges from the eastern end of Assam to Tirhut, and the Terai as far west as Rohilcund, the plains near the coast in Midnapore and Orissa, and also the plains in the Eastern

Central Provinces as far south as the Godaveri and Pranhita rivers. A fawn-coloured race occurs in Northern Assam, and smaller varieties in Ceylon and some of the Malayan islands. In a domesticated state, South Europe, Egypt, etc. Native name of male, *arna*; of female, *arni*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
77 $\frac{3}{8}$	17 $\frac{7}{8}$	...	...	...	?	British Museum.
-71	21 $\frac{1}{2}$	34 $\frac{3}{4}$	60	...	Assam	Measured by A. O. Hume; shot by A. Forbes.
-♀ 70 $\frac{1}{2}$	18	...	64	78	Do.	The late Sir A. Campbell-Orde.
70	18 $\frac{1}{2}$	60	67 $\frac{3}{4}$	72	Do.	J. H. Whitehouse.
65 $\frac{3}{4}$	20 $\frac{1}{2}$	...	...	...	Do.	British Museum (Col. J. Mathie).
-♀ 64 $\frac{1}{2}$	18	42 $\frac{1}{2}$	60	96	Do.	J. Campbell of Kilberry.
-63	18	...	...	60	Do.	Sir A. Campbell-Orde.
62	17	101	...	...	Do.	Hon. Walter Rothschild.
♀ 61 $\frac{1}{2}$	15 $\frac{3}{4}$	22 $\frac{1}{2}$	45 $\frac{1}{2}$	...	Cooch Behar	H. H. the Maharajah of Cooch Behar.
♀ 61 $\frac{1}{2}$	16	22	48	...	Assam	Hon. Walter Rothschild.
60	22	...	64	72	Central Provinces	Capt. B. Vincent.
60	20	40	52	...	?	Sir Edmund G. Loder, Bart.
58 $\frac{3}{8}$	12 $\frac{3}{8}$	...	...	...	?	British Museum.
58 $\frac{1}{2}$	12 $\frac{3}{4}$	...	...	...	?	Do.
-57	18	...	...	...	Central Provinces	J. D. Inverarity.
57	18 $\frac{1}{2}$	41 $\frac{1}{2}$	60	...	Do.	Lieut.-Col. G. D. F. Sullivan.
-57	15	49	52	...	Assam	A. H. Straker.
-♀ 57	14 $\frac{1}{2}$	53	61	...	?	Sir Edmund G. Loder, Bart.
56 $\frac{1}{2}$	21 $\frac{1}{2}$	40	52 $\frac{3}{4}$	...	Assam	A. O. Hume.
-56	18	29 $\frac{1}{2}$	...	57 $\frac{1}{2}$	?	J. Whitaker.
♀ 56	19 $\frac{1}{4}$	33 $\frac{7}{8}$	50 $\frac{1}{2}$	...	Cooch Behar	H. H. the Maharajah of Cooch Behar.
56	17 $\frac{1}{2}$	62	61 $\frac{1}{2}$	64 $\frac{1}{2}$	Bengal	G. Monteath.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	29	44	...	?	J. Carr Saunders.
-♀ 55	13 $\frac{1}{2}$	..	...	...	Bhutan Duars	Major-Gen. A. A. A. Kinloch.
55	22	55 $\frac{1}{2}$	62	66	Central Provinces	L. T. Harris.
54 $\frac{1}{2}$	18 $\frac{1}{8}$	38 $\frac{1}{4}$	48 $\frac{7}{8}$	...	?	British Museum (Hume Collec- tion).

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
♀ 54½	12¾	69¾	70	...	Assam . . .	A. O. Hume.
54½	19	50	59	64	?	Viscount Powerscourt.
54	20	40	47	55	?	Do.
-54	23	39	...	59½	Burma . . .	Pegu Club, Rangoon.
53¼	12½	23¼	40½	...	?	British Museum (Hume Collec- tion).
53½	12½	...	...	...	Nepal . . .	British Museum (B. H. Hodg- son).
¹ 53½	23 (6 ft. 2½ ins. at shoulder)	30	42½	...	Cooch Behar . . .	H. H. the Maharajah of Cooch Behar.
-53½	12½	31	...	...	Java . . .	Dr. Albert von Stephani.
53	19	36½	48¾	56	?	Lieut.-Col. H. Lysons.
-53	...	...	...	...	?	Lucknow Museum.
-51¾	13¼	71¼	...	...	?	Imperial Museum, Vienna.
51¾	18½	22	38¼	...	Assam . . .	Sir Peter Walker, Bart.
-51¾	19¾	45¾	50	...	Central Provinces . .	P. H. G. Powell-Cotton.
50¾	18¾	54½	60¼	65	Patna . . .	Brig.-Gen. F. H. Whitby.
♀ 50½	14¾	40½	59	...	Central Provinces . .	Col. M. M. Bowie.
-50½	20	64	...	...	Do. . .	Major H. de Préé.
50	18½	48½	60	...	Do. . .	Major C. F. Pinney.
50	13¼	33	38½	...	Assam . . .	Noel Fenwick.
50	17	31¾	50	...	Do. . .	Lieut.-Col. D. M. Lumsden.
-49¾	17¼	16¼	37	...	Cooch Behar . . .	Count Scheibler.
-49½	18½	45½	49½	...	Central Provinces . .	A. P. Percival.
49	22¾	23	35½	45	Assam . . .	E. W. Dixon.
49	19	49¼	52½	59	Central Provinces . .	Major G. T. M. Bridges.
-49	18	35¼	42¾	...	Assam . . .	F. J. Needham.
48½	18½	33	51	...	Central Provinces . .	Col. F. C. Lister-Kay.
48½	19	27	47	...	Assam . . .	Major E. T. Paul.
-48½	13¾	48¾	57	...	Central Provinces . .	P. H. G. Powell-Cotton.

¹ Measured round outside curves across skull, 9 ft. 11½ in. Another pair, 10 ft. 5 ins., circumference of horn at bone 21 inches.

The following specimens are mostly from Ceylon :—

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
♀ 35	9½	31½	37½	...	Ceylon . . .	R. Wahrmann.
34½	15½	25½	35	...	Do. . . .	Earl Cairns.
♀ 33½	9	31½	37	...	Do. . . .	Do.
33½	13	32½	38	43	Do. . . .	Capt. F. H. N. Pym.
31½	16	28	...	38½	Do. . . .	Marquis Camden.
31½	15½	27	34	38	Do. . . .	P. Niedieck.
31½	16	...	47½	...	South Australia (introduced)	H. L. Heber Percy.
- ♀ 28	9½	18½	26	31½	Ceylon . . .	H.M. Von Archer.
- ♀ 27½	9½	15	25	29½	Do. . . .	H.R.H. Prince Pedro d'Orleans et Braganza.



Head of Bull Anoa, from life.

ANOA (*Bos depressicornis*).

The smallest wild member of the ox tribe, characterised by its straight, upright horns, and the frequent presence of white spots on the sides of the head or elsewhere. Although so different in the form of the head and horns from the adult Indian buffalo, the anoa is in these respects much more like the young of the latter; and the two are connected to a considerable extent by the tamarau, or Philippine buffalo (*Bos mindorensis*) of the island of Mindoro. As in all the Oriental buffaloes, the hair of the fore part of the back is directed forwards in the anoa. Height at shoulder about 3 feet 3 inches.

Distribution.—The island of Celebes.

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
-15 $\frac{3}{8}$	7 $\frac{1}{8}$	7 $\frac{1}{2}$	Paris Museum.
-13 $\frac{1}{2}$ ¹	9 $\frac{1}{4}$	5	Jesuit College, Manila.
12 $\frac{3}{8}$	6	6 $\frac{1}{2}$	British Museum.
10 $\frac{1}{2}$	6 $\frac{1}{4}$	7	Carl Hagenbeck.
10	5 $\frac{7}{8}$	5 $\frac{5}{8}$	Sir Victor Brooke's Collection.
-9 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	Dublin Museum.
8 $\frac{7}{8}$	4 $\frac{3}{8}$	4 $\frac{1}{4}$	Sir Edmund G. Loder, Bart.

¹ Measured by Capt. R. A. J. Montgomerie.



{Skull and Horns of Bull and Cow Bison, shot by Mr. St. George Littledale.

EUROPEAN BISON (*Bos bonasus*).

The great elevation of the fore-quarters, the mass of long hair clothing the head, shoulders, and fore-part of the body, together with the peculiar form of the head and horns, the latter of which are cylindrical, serve at once to distinguish the bison from the other members of the ox tribe. There is also a difference in the number of ribs between the bison and the more typical oxen, the number in the former varying from 14 to 15 pairs. In the European species the mass of hair on the fore-quarters is not so long as in its American cousin, the form of the skull is different, and the hind-quarters do not fall away nearly to the same extent. Some difference may be noted between Caucasian and Lithuanian specimens, but it is doubtful whether these are sufficient to indicate a racial distinction. Height at shoulder 6 feet 1 or 2 inches. In a bull killed by Mr. St. George Littledale, the length from the nose to the root of the tail measured 10 feet 1 inch, the height at the shoulder 5 feet 11 inches, and the approximate girth of the body 8 feet 4 inches.

Distribution.—At the present day restricted to the Caucasus and the forest of Bielowitzka in Lithuania; the herds in the latter district existing in a protected state. The name aurochs, so commonly applied to the bison, belongs to the extinct wild ox of Europe.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
18 $\frac{1}{4}$	12 $\frac{1}{8}$	13 $\frac{3}{4}$	19 $\frac{1}{4}$	Lithuania . . .	British Museum (Czar of Russia).
-18.2	10.8	17.5	20.14	Bielowitzka . . .	Prince Henry of Liechten- stein.
-18	12 $\frac{1}{8}$	16	20	Caucasus . . .	St. George Littledale.
17 $\frac{1}{2}$	10	18 $\frac{1}{2}$	...	Bielowitzka . . .	Major Algernon Heber-Percy.
17.4	13.3	13.4	20.10	Do. . .	Prince Henry of Liechten- stein.
16 $\frac{3}{4}$	12 $\frac{1}{4}$	21 $\frac{7}{8}$	24 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
♀ 16	8 $\frac{1}{4}$	12	...	?	Science and Art Museum, Edinburgh.
-15 $\frac{3}{4}$	12 $\frac{5}{8}$	21 $\frac{1}{4}$	...	Lithuania . . .	Imperial Museum, Vienna.
♀ 15 $\frac{1}{4}$	8	6	...	?	Major Algernon Heber-Percy.
♀ 13	8 $\frac{1}{4}$	9 $\frac{3}{4}$	14	Caucasus . . .	St. George Littledale.



Skull and Horns of American Bison.

AMERICAN BISON (*Bos bison*).

Some of the points distinguishing this species from the European bison have been mentioned under the head of the latter, but it may be added that in the typical race of the former the horns are shorter, thicker, blunter, and more sharply curved. In the skull of the American animal the sockets of the eyes have a more tubular form. Height at shoulder about 6 feet; weight from 15 to 20 cwt.; an adult bull weighed by W. T. Hornaday scaled 1727 lbs.

Distribution.—The greater portion of Western North America, ascending to the Great Slave Lake, and descending to New Mexico and Texas; now nearly exterminated. American writers recognise two races (or species), the prairie bison (*B. bison typicus*) and the larger wood-bison (*B. bison athabascæ*) of the forest highlands of the North-West.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
-21½	15½	...	35 outside	Northern Montana . . .	W. F. Sheard.
20⅞	15	...	30½	Wyoming . . .	Hon. F. Thellusson.
-20¼	16⅞	33½	...	?	W. H. Root.
-19	12½	...	...	W. Montana . . .	P. Liebing.
-18½	15	25	...	Wyoming . . .	P. N. Graham.
-18	14	...	...	Montana . . .	F. Sauter.
17¾	12¾	15¾	...	?	H.R.H. the Duke of Saxe-Coburg and Gotha.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-17 $\frac{1}{2}$	12 $\frac{1}{2}$	...	...	S.W. Montana . . .	President Roosevelt.
17 $\frac{1}{2}$	12	...	25 $\frac{1}{2}$	Wyoming . . .	H. R. H. le Duc d'Orléans.
17 $\frac{1}{2}$	13 $\frac{1}{2}$	21	...	?	Viscount Powerscourt.
17 $\frac{1}{8}$	11 $\frac{3}{8}$	10 $\frac{3}{8}$	17 $\frac{1}{8}$	?	British Museum.
-17	14	17 $\frac{1}{2}$	...	Yellowstone, Montana	Count E. Hoyos.
-16 $\frac{3}{4}$	13	19 $\frac{1}{2}$	...	Nebraska . . .	Imperial Museum, Vienna.
16 $\frac{3}{8}$	14 $\frac{1}{4}$	24	...	Bighorn Mts., Wyoming	Moreton Frewen.
16 $\frac{1}{2}$	12 $\frac{1}{2}$	19 $\frac{3}{8}$	...	Colorado . . .	Sir Edmund G. Loder, Bart.
16 $\frac{1}{4}$	13 $\frac{1}{2}$	14 $\frac{1}{4}$	...	?	Duke of Portland.
16 $\frac{3}{8}$	15 $\frac{7}{8}$	25 $\frac{3}{4}$	...	Colorado . . .	Sir Edmund G. Loder, Bart.
15 $\frac{3}{4}$	14	27 $\frac{3}{4}$	...	N.W. Territory . . .	E. G. Jenkins.
15 $\frac{1}{2}$	14 $\frac{3}{8}$	...	19 $\frac{3}{4}$	Wyoming . . .	St. George Littledale.
-15.8	12.14	15	...	Indian Territory near Texas	Prince Henry of Liechten- stein.



Skull and Horns of Male Yak. From a specimen in the British Museum, presented by Mr. A. O. Hume, C.B.

YAK (*Bos grunniens*).

The plateau of Tibet is remarkable for the number of its peculiar mammals, among which is the yak. Apparently its nearest relatives are the bisons, but the yak has not the great elevation of the withers in comparison with the hind-quarters so distinctive of the latter, and the long hair forms a fringe on each side of the flanks, shoulders, and thighs, as well as a tuft on the chest, while the tail is clothed with a huge mass of similar long hair, forming, when cut off and mounted, the well-known "chowries." Yak-horns are much larger than those of living bison, and have a totally different curvature; while there are also important differences in the skull. Height at shoulder from about 4 feet 10 inches to at least 5½ feet; girth behind shoulder, 9 feet 1½ inches; length from between horns to base of tail, 8 feet ½ inch;

tail, 3 feet $2\frac{1}{2}$ inches; from between horns to nose, 1 foot $3\frac{1}{2}$ inches (Capt. H. M. Biddulph). Weight about 1140 lbs. Wild yak are uniformly blackish brown in colour, any trace of white indicating domestication, and probably cross-breeding.

Distribution.—The plateau of Tibet, part of the Kansu province of China, and Northern Ladak, at elevations between about 14,000 and 20,000 feet. The peculiar grunting cry from which the animal takes its name is developed only in the domestic breed.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
-39	...	...	?	Lucknow Museum.
-38 $\frac{3}{4}$	18 $\frac{1}{2}$	26 $\frac{1}{2}$	Kuenlue Mts.	A. O. Hume, C.B. (shot by late A. Dalgleish).
38 $\frac{1}{4}$	17	19	Do.	Brit. Museum (Hume Collection).
35 $\frac{1}{2}$	15	16	?	E. L. Phelps.
35 $\frac{1}{2}$	14 $\frac{1}{2}$	17	Tibet.	St. George Littledale.
34	12	30 $\frac{1}{2}$	Ladak.	Hon. Walter Rothschild.
-32 $\frac{3}{4}$	13 $\frac{1}{2}$	19	Tibet.	B. H. Shaw-Stewart.
-32 $\frac{3}{4}$	16 $\frac{1}{4}$	18 $\frac{3}{4}$	Do.	Major H. M. Biddulph.
-32 $\frac{3}{4}$	14	17 $\frac{1}{8}$	Do.	P. H. G. Powell-Cotton.
32 $\frac{1}{2}$	16	25	Do.	Sir Edmund G. Loder, Bart.
32	13 $\frac{3}{8}$	15 $\frac{1}{4}$	Do.	H. C. V. Hunter.
32	14 $\frac{1}{2}$	9	Do.	I. Morse.
32	16	17	Do.	P. Church.
32	15 $\frac{3}{4}$	21 $\frac{3}{4}$	Do.	D. L. R. Lorimer.
-31 $\frac{1}{8}$	14 $\frac{1}{4}$	18 $\frac{1}{4}$	Chang Chenmo.	P. H. G. Powell-Cotton.
31 $\frac{1}{2}$	15 $\frac{1}{2}$	17 $\frac{1}{4}$	Chinese Tibet.	Capt. J. A. Stewart Balmain.
31 $\frac{1}{4}$	15 $\frac{1}{2}$	13	Do.	Capt. H. W. Codrington.
31	14	...	Do.	Col. F. C. Lister-Kay.
31	13 $\frac{1}{2}$	14	Ladak.	Arnold Pike.
30 $\frac{3}{4}$	13 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Sir Robert Harvey, Bart.
♀ 30 $\frac{3}{4}$	13	20	Do.	Capt. L. Oldfield.
♀ 30	11 $\frac{1}{4}$	45 $\frac{1}{2}$	Tibet.	Duke of Bedford.
30	14 $\frac{1}{4}$	19 $\frac{3}{4}$	?	Major W. R. Codrington.
30	13	15 $\frac{1}{4}$	Chang Chenmo.	H. Z. Darrah.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
29½	13½	11	Chang Chenmo . . .	Lieut-Col. G. D. F. Sullivan.
29	15	9	Do.	Sir Edmund G. Loder, Bart.
29	15	13½	Ladak	Capt. H. H. P. Deasy.



Skull and Horns of Gaur shot by H.H. The Maharajah of Cooch-Behar.



Skull and Horns of Cow Gaur, from Mr. A. O. Hume's specimen.

GAUR (*Bos gaurus*).

This splendid wild ox, the miscalled bison of Anglo-Indian sportsmen, is the typical representative of a group of oriental species nearly related to the domesticated ox, but presenting certain well-marked points of difference. Among these may be noted the shorter head and tail, the frequently elliptical section of the horns, and, above all, the presence of a more or less distinct ridge running from the withers to the middle of the back, where it terminates in a sudden step. In the gaur this ridge is very strongly developed, but the most distinctive feature of the animal is the great arch on the crown of the head between the horns, which bends forward to communicate a concave profile to the forehead. With the exception of the white "stockings"

common to all the members of the group, the colour of the gaur is uniform ; but the much flattened horns are of a peculiar yellowish green tint at the base. The height of adult bulls at the shoulder varies from about 6 feet to 6 feet 4 inches, though specimens of not more than 5 feet 5 or 6 inches are killed.

Distribution.—The forest hill-tracts of Peninsular India, Assam, Burma, and the Malay Peninsula, as well as the forests along the outer Himalaya as far west as Nepal. South of the Ganges, where it has not been exterminated, the gaur inhabits suitable districts in Chutia Nagpur, Orissa, the Northern Circars, Central Provinces, Hyderabad territories, and all the Western Ghats.

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longest horn.	Locality.	Owner.
-46	20 $\frac{1}{2}$	33	40	...	Malay States .	H. Da. Prah.
-43 $\frac{1}{2}$	17 $\frac{3}{4}$	28 $\frac{3}{4}$	...	...	Travancore .	H. H. Maharajah of Travancore.
43	20	31	38	32	Cooch Behar .	Maharajah of Cooch-Bihar.
-43	20 $\frac{1}{4}$	18 $\frac{3}{4}$	...	39 $\frac{1}{4}$	Salwin, Burma	Bombay Natural History Society's Museum.
43	17	32 $\frac{1}{2}$	...	29 $\frac{1}{2}$	Coimbatore, S. India	P. Church.
43	19 $\frac{3}{4}$	34 $\frac{1}{2}$	...	28	Upper-Burma .	C. W. A. Bruce.
42 $\frac{1}{2}$	18 $\frac{1}{2}$	25	33 $\frac{1}{4}$	33 $\frac{1}{2}$	Travancore .	Capt. T. W. Greenfield.
-42 $\frac{1}{2}$	...	...	...	...	E. Annamulis .	Col. A. Pollock.
42 $\frac{1}{2}$	19 $\frac{1}{2}$	31	35 $\frac{3}{4}$	31 $\frac{1}{4}$	Madras . .	Major T. J. R. Lucas.
41 $\frac{1}{2}$	16	30	...	29	Assam . .	A. J. Walter.
41 $\frac{1}{4}$	20	32 $\frac{1}{2}$	36 $\frac{1}{4}$	30	?	J. F. Bryant.
41	18	24	...	33 $\frac{3}{4}$	Madura District	Bethnal Green Museum (J. D. Goldingham).
-41	16	...	38	30	Central Provinces	Lieut.-Col. J. W. H. Flanagan.
41	19 $\frac{3}{4}$	37	...	27 $\frac{3}{4}$	Kalkerry, S. India	Capt. W. E. Fairholme.
40 $\frac{1}{2}$	20	25	...	34 $\frac{3}{4}$	Vardi Mullay .	Baron von Massow.
40 $\frac{1}{2}$	19	29	36	32	Madras . .	Rowland Ward.
-40	20 $\frac{1}{4}$	23	...	34	Madras Presidency	Lieut. - Col. C. Heyworth-Savage.
40	19 $\frac{1}{4}$	26	34 $\frac{1}{2}$	32	Burma . .	A. E. English.
40	17	31 $\frac{1}{2}$	34	27 $\frac{1}{2}$	E. Madras .	W. O. Horne.
40	15	33 $\frac{1}{4}$	...	26	Central Provinces	C. F. Egerton.

RECORDS OF BIG GAME

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longest horn.	Locality.	Owner.
39 $\frac{3}{4}$	18 $\frac{1}{2}$	34 $\frac{1}{4}$	35 $\frac{1}{4}$	26 $\frac{1}{4}$	?	R. McD. Hawker.
39 $\frac{1}{2}$	20	25 $\frac{1}{4}$	33 $\frac{1}{2}$	31	Annamulis	C. W. Wood.
-39 $\frac{1}{2}$	18	31 $\frac{1}{2}$	33 $\frac{3}{4}$	29	Asirgarh Jungle, C.I.	Lieut.-Col. M. Cust.
-38 $\frac{3}{4}$	21	...	32 $\frac{1}{4}$	33 $\frac{1}{2}$	Mysore	Surgeon-Capt. C. W. H. Whitestone.
38 $\frac{3}{4}$	17 $\frac{1}{2}$	25 $\frac{3}{4}$	32 $\frac{3}{4}$	30	?	A. H. Sharp.
-38 $\frac{3}{8}$	18 $\frac{1}{2}$	28 $\frac{3}{8}$	...	28 $\frac{1}{4}$	Raipur, C. P.	Capt. M. M'Neill.
-38 $\frac{3}{8}$	18	34	...	24	?	J. D. Inverarity.
38 $\frac{1}{4}$	17 $\frac{3}{4}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	27 $\frac{3}{4}$	Cooch-Behar	H. R. Beaumont.
38	18	22 $\frac{1}{2}$	33	31 $\frac{3}{4}$	Madras	S. Cox.
-38	19	18	31	34 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
37 $\frac{1}{2}$	19 $\frac{1}{2}$	24 $\frac{1}{4}$	30 $\frac{3}{4}$	31	Mysore	Viscount Powerscourt.
37 $\frac{1}{2}$	18	19	32 $\frac{1}{4}$	31	?	Colonel Baillie.
37 $\frac{1}{4}$	20	25	31 $\frac{1}{4}$	29	Chota Nagpur District	Major J. W. Yardley.
36 $\frac{1}{2}$	21 $\frac{1}{2}$	22 $\frac{1}{4}$	29 $\frac{3}{4}$	28	Straits Settlements	Mrs. Pauling.
-36 $\frac{1}{2}$	17 $\frac{1}{2}$	17	...	28	Mysore	Capt. G. H. Evans.
-36 $\frac{1}{2}$	20 $\frac{1}{2}$	26 $\frac{1}{4}$	...	27 $\frac{1}{2}$	?	Major-General W. Rice.
36 $\frac{1}{2}$	18 $\frac{1}{4}$	26 $\frac{3}{4}$	...	26 $\frac{1}{2}$	?	Major R. H. Fraser.
36	17 $\frac{1}{4}$	23 $\frac{1}{4}$	29 $\frac{1}{2}$	28	S. India	Capt. C. S. Timins.
36	19 $\frac{1}{2}$	15 $\frac{1}{4}$	29	34	?	Major F. J. Eveleigh.
35 $\frac{1}{2}$	16	18	31	25 $\frac{1}{2}$	?	E. R. Collins.
35 $\frac{1}{2}$	17 $\frac{1}{2}$	21 $\frac{1}{2}$	29 $\frac{3}{8}$	29 $\frac{1}{2}$	C. Provinces	W. J. Considine.
35	19 $\frac{1}{2}$	16	...	30 $\frac{1}{2}$	Travancore	Major Lord Douglas Compton.
-35	17 $\frac{1}{2}$	...	...	29	North Kanara	Lieut.-Col. L. L. Fenton.
35	18 $\frac{1}{2}$	19 $\frac{1}{2}$	29	29 $\frac{1}{2}$	?	Major H. Patton-Bethune.
35	17 $\frac{1}{4}$	19	29 $\frac{1}{2}$	29	?	Major G. F. Mockler.
35	18	19	29 $\frac{1}{4}$	28	Bastar, C. P.	Lord Charles Bentinck.
35	19	23	28 $\frac{3}{4}$	26	Cooch-Behar	Sir Henry D. Tichborne, Bart.
-34	18 $\frac{1}{2}$	19	28	34	Mysore	Lord Curzon.
-34	17 $\frac{3}{4}$	24	...	...	Malay States	T. R. Hubback.
♀ 27	13 $\frac{1}{4}$	13	22	24	N. Travancore Hills	A. O. Hume.

Widest inside. ¹	Circumference at base.	Tip to Tip.	Length on outside curve of longest horn.	Locality.	Owner.
39	17 $\frac{3}{4}$	28 $\frac{1}{2}$	29 $\frac{1}{2}$	Siam . .	A. Waley.
36	17	26 $\frac{1}{4}$	27 $\frac{1}{2}$	Assam . .	L. Truninger.
36	15	26 $\frac{1}{4}$	26	Central Provinces	Capt. John Fuller.
36	17 $\frac{1}{4}$	27	26	Do.	Col. M. M. Bowie
37 $\frac{1}{4}$	18 $\frac{1}{2}$	22	30 $\frac{1}{4}$	Travancore .	A. T. Mackenzie.
35	17 $\frac{1}{4}$	20 $\frac{1}{4}$	27 $\frac{1}{2}$	Tezapore, Assam	A. Y. Thomson.
35	18	23	26	Burma . .	Capt. S. L. Robinson.
34 $\frac{3}{4}$	18	22 $\frac{1}{2}$	28	Assam . .	Hon. S. Tollemache.
34 $\frac{1}{2}$	18	23 $\frac{1}{2}$	33 $\frac{1}{8}$	Cooch-Bihar .	Maharajah of Cooch-Bihar.
34	18 $\frac{1}{4}$	20 $\frac{1}{4}$	27 $\frac{1}{2}$	Travancore .	Capt. Hon. E. Baring.
34	17 $\frac{1}{4}$	18 $\frac{1}{2}$	25	Central Provinces	Dr. W. P. Y. Bainbridge.
34	15 $\frac{3}{4}$	24 $\frac{5}{8}$	24 $\frac{1}{2}$	?	Capt. H. De Prée.
34	19	27	24	Burma . .	W. F. Loftus-Tottenham.
33 $\frac{3}{4}$	18	23 $\frac{3}{4}$	25	Kanara . .	Capt. G. J. Fitzgerald.
33 $\frac{1}{2}$	18	15 $\frac{3}{4}$	28 $\frac{1}{2}$	Travancore .	Capt. H. L. Cottingham.
33 $\frac{1}{2}$	15	22	23	Assam . .	Major E. T. Paul.
32 $\frac{3}{4}$	17 $\frac{1}{8}$	32 $\frac{1}{4}$	27 $\frac{7}{8}$	Central Provinces	Major C. S. Cumberland.
32 $\frac{3}{4}$	18 $\frac{1}{2}$	23 $\frac{3}{8}$	26	Do.	G. de H. Smith.
32 $\frac{1}{2}$	19	16 $\frac{1}{2}$	26	Do.	Capt. C. F. Pinney.
32 $\frac{1}{2}$	17 $\frac{1}{8}$	21 $\frac{3}{8}$	31 $\frac{3}{4}$	Travancore .	A. O. Hume.
32 $\frac{1}{4}$	17 $\frac{1}{2}$	20 $\frac{1}{2}$	33	?	Major P. Z. Cox.
32	19 $\frac{1}{4}$	18 $\frac{1}{4}$	39	N. Travancore .	A. W. Turner.
32	16	32	30	Do.	J. D. Rees.
♀ 22	10 $\frac{1}{2}$	14 $\frac{5}{8}$	22	?	Major H. de Prée.
♀ ...	10 $\frac{1}{2}$	12	20 $\frac{1}{2}$	Madras . .	Major J. W. M. Cotton.
♀ ...	11 $\frac{1}{2}$	...	19 $\frac{1}{2}$	N. Kanara .	Lieut.-Col. L. L. Fenton.
♀ 15 $\frac{1}{2}$	12	2 $\frac{1}{4}$	23 $\frac{1}{2}$	Mysore . .	Capt. H. S. Wood.

¹ Please note these measurements are inside.

REMARKS.
Record headshot Cooch-Behar.
Record bull as regards bulk and height.
Record cow's head, very big cow—looked like a bull a little way off.



Skull and Horns of Bull Gayal, from Mr. A. O. Hume's specimen.

GAYAL (*Bos frontalis*).

Chiefly, if not entirely, known in a half-domesticated condition, the gayal is a rather smaller animal than the gaur, of a blacker colour, with a large dewlap, and with a straight line between the bases of the massive horns, which are more divergent, less curved upwards, more nearly cylindrical in section, and of a darker colour. The head, too, is much shorter, with the forehead very broad and flat. It may be only a domesticated race of the gaur, as there are indications of a transition in the form of the skull between the two.

Distribution.—Reported from the Tenasserim district in a wild state, and kept in a semi-domesticated condition by many of the hill-tribes of Assam and Chittagong.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15	11½	26½	?	British Museum.
14½	13½	28	Tenasserim Hills	A. O. Hume. (See illustration.)
14	14	...	?	Indian Museum.
12½	13¼	27¼	?	British Museum.



Head of Bull Burmese Banting, or Tsaing. From a specimen shot by Mr. R. McD. Hawker.

BANTING (*Bos sondaicus*).

The third and last member of the gaur group departs less widely from the type of the common ox than do the two others, the ridge on the withers being less developed, and the horns almost cylindrical. The cows, too, are always reddish coloured, although the bulls may be black, and in the latter sex at least there is always a large white patch on the rump. Very distinctive of the species is the presence of a horny shield on the crown of the head between the bases of the horns. Height at shoulder about 5 feet 9 inches.

Distribution.—Burma, the Malay Peninsula, Borneo, Java, Bali, and perhaps Sumatra. At least two distinct races of the banting are distinguishable. First, the true banting, or Java ox (*Bos sondaicus typicus*), from Java, and perhaps some of the other Malay islands and the Peninsula. In this race the old bulls become of a deep blackish brown colour. The same tint is characteristic of the old male banting in Borneo, but the horns are directed more uprightly.

The second well-defined race (*B. sondaicus birmanicus*) inhabits Burma, and may extend northwards to Manipur. Old bulls retain the reddish tint of the cows throughout life, showing more or less of gray on the head.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-33½	17	26½	35	Upper Burma . .	Major H. S. Wood.
30	16½	24½	32	Do. . .	H. W. Marsden.
-30	17	...	...	Java . . .	Indian Museum.
29	16	28	34½	Burma . . .	H. L. P. Walsh.
-28½	17½	30½	36	Do. . . .	Capt. G. H. Evans.
28½	17¾	28½	34	Do. . . .	W. O. Hannington.
-28½	15	26½	36½	Java	H. Van Son.
-27½	14½	27½	34½	Burma	Col. O. E. Lloyd.
27	14½	20½	28½	Upper Burma . .	British Museum (R. McD. Hawker).
27	17¾	24½	32½	Do. . . .	J. McF. Petters.
26½	16½	21½	28	Java	Sir Edmund G. Loder, Bart.
-26	18	17½	27	Burma	C. W. A. Bruce.
25¾	16½	20½	26½	Siam	H. C. V. Hunter.
25¾	17¾	13	24	Burma	Major C. S. Cumberland.
-25½	13½	29	32	Do. . . .	W. H. Prendergast.
25½	19½	24½	30	Do. . . .	C. W. A. Bruce.
24¾	12½	15¾	24½	Java	British Museum.
23	16¾	30	29½	Do. . . .	C. W. A. Buma.
♀ 23	12½	16½	25	Upper Burma . .	R. McD. Hawker.
♀ 22½	13½	15½	23	Java	C. W. A. Buma.
21¾	12½	13½	19½	Borneo	British Museum (H. B. Low).
20	16	22½	24½	Kudah, B. N. Borneo	H. Ll. Davies.
♀ 20	12	21½	28	Upper Burma . .	C. W. A. Bruce.
-19½	11½	17	20	Borneo	Sir Edmund G. Loder, Bart.
♀ 15½	7½	7½	16½	Tammu, Burma . .	Major H. S. Wood.

DOMESTICATED OXEN (*Bos taurus* and *B. indicus*).

The domesticated cattle of Europe are the descendants of the primitive wild ox, or aurochs (a name frequently misapplied to the bison) of Europe and North Africa (*Bos taurus primigenius*), now completely extinct in the wild state, although it survived on the continent till the Middle Ages. On the other hand, the humped oxen (zebu) of India and the Galla cattle of Africa appear to trace their origin to a totally distinct species (*Bos indicus*), also extinct in the wild state.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
81½	18½	103½	...	Ngamiland .	The late W. C. Oswald.
-?	17	100	124	Do. .	A. Ohlsson.
57	19½	82	...	Bechuanaland	Sir Edmund G. Loder, Bart.
56½	17½	76½	...	South Africa .	R. A. Cooper.
47	15½	21½	...	Abyssinia (Galla Ox)	British Museum (Sir H. Salt).
44	12½	70½ (about)	...	?	British Museum.
42½	23½	22½	...	Central Africa	Brit. Museum (Col. Denham).
41½	14	52½	...	Madagascar .	Bethnal Green Museum.
40½	12½	60½	...	Vienna (Polish Bull)	British Museum.
-38½	12½	53½	...	Hungary .	Dr. Albert von Stephani.
38½	10½	54½	...	Italy . .	Bethnal Green Museum.
37½	12	60	...	Cape of Good Hope	British Museum.
31½	10½	23½	...	Galla . .	A. E. Butter.
30½	12½	35	...	Spain . .	British Museum.
29½	11½	28½	...	Gambia .	British Museum (Earl of Derby).
17½	10½	30½	...	Buenos Aires (Niati Cattle)	British Museum (G. Claraz).
17½	10½	25½	...	India . .	British Museum.
12½	8	16½	...	Angola .	Sir Victor Brooke's Collection.
11½	7½	single horn	...	Nepal . .	British Museum (B. H. Hodgson).

The following specimens belong to British white park-cattle, which, although now half-wild, are the descendants of at least partially domesticated breeds.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest Inside.	Locality.	Owner.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	36 $\frac{1}{2}$	...	Chartley Park	Hon. Walter Rothschild.
18 $\frac{1}{2}$	7	34 $\frac{3}{4}$	...	Do.	Major James Grant.
18 $\frac{1}{2}$	10 $\frac{3}{8}$	20	21 $\frac{1}{8}$	Chillingham Park	British Museum (Earl of Tankerville).
♀ 18 $\frac{1}{4}$	7	10 $\frac{1}{8}$	15 $\frac{3}{8}$	Do.	Do.
15 $\frac{1}{4}$	9 $\frac{5}{8}$	17 $\frac{3}{8}$	18 $\frac{1}{8}$	Northumber- land	British Museum (Duke of Hamilton).
15	7 $\frac{1}{2}$	20 $\frac{3}{4}$	...	Chartley Park	Capt. G. W. Hill, R.N.

HIPPOPOTAMUS (*Hippopotamus amphibius*).

Somali, <i>Jir.</i>	Chilala, <i>Mourvu.</i>	Boer, <i>Zee-koe.</i>
Swahili, <i>Kiboko.</i>	Hausa, <i>Dorina.</i>	Swazi, <i>Imvubu.</i>
Danakil, <i>Dul.</i>	Masai, <i>Macow.</i>	Basuto, <i>Ikubu.</i>
Galla, <i>Robi.</i>	Abyssinian, <i>Gumare.</i>	

Such a familiar animal as the uncouth and unwieldy hippopotamus—the largest member of the swine group—requires but little in the way of description here. It is widely distinguished from the pigs and warthogs by the broad and rounded muzzle—so unlike the disc-shaped snout of the latter—and consequently typifies a family by itself. The tusks and molars are likewise of a totally different and distinctive type; while the feet have four sub-equal toes with symmetrical, rounded nails. In all its organisation the hippopotamus is beautifully adapted for a semi-aquatic life; the eyes and nostrils forming the highest points of the head, and thus allowing it to come up and breathe with the least possible exposure of its body. The weight of a full-grown bull hippo is at least three tons.

Distribution.—Formerly this animal frequented most of the rivers of Africa south of the Sahara, but it has long since been exterminated from the lower reaches of the Nile, and is daily becoming scarcer in the South African rivers. In the Zambesi, where it is less easily attacked than in the smaller rivers of Mashonaland, it is still abundant, as it also is in the Chobi and neighbouring rivers, as well as in Lake Ngami; and even in the lower reaches of the Orange River a few are still to be met with. North of the Zambesi these animals occur in great numbers. Hippos are chiefly hunted for the sake of their hides, which are manufactured into sjamboks, or raw-hide whips. Their tusks have also a certain commercial value, although not so great as formerly, when they were employed for artificial teeth.

In Liberia and some other parts of the West Coast there occurs the much smaller pigmy hippopotamus (*H. liberiensis*), an animal measuring only some six feet in length, and possessing more the habits of a pig. It also differs from the common species by having, as a rule, only one, instead of two, pairs of incisor teeth between the tusks.

A hippopotamus, shot on the Shiré River, British Central Africa, by Mr. F. Vaughan Kirby, measured as follows:

	ft.	in.		ft.	in.
Total length, nose to tail	14	2	Length of tusks	2	5
Tail	1	8	Circumference of tusks		8½
Vertical standing height	3	10½	Weight per pair	14½	lbs.

The tusks measured 31 and $30\frac{1}{4}$ inches, with circumference $8\frac{3}{4}$ inches, after they were extracted from the skull.

Tusks.

Length round outside curve.	Circumference.	Locality.	Owner.
¹ 51	9 (malformed)	S.E. Africa . . .	J. Lamont.
¹ 41	8 Do.	Tana River, East Africa	J. Bennett Stanford.
¹ 38 protruding from jaw	...	Nyasaland . . .	Major P. W. Forbes.
¹ 37½	8½	Shiré River . . .	Comdr. A. T. Hunt, R.N.
32	9½	Lualaba, Central Africa	S. L. Hinde.
31½	10½	?	Sir Clement Hill.
31½	9½	?	Sir Edmund G. Loder, Bart
31½	9	?	E. L. Fletcher.
² 31½	...	S.E. Africa . . .	F. Vaughan Kirby.
31	10	N.E. Rhodesia . . .	G. M. E. Leyer.
30½	9½	St. Lucia Bay . . .	Hon. Charles Ellis.
-30½	8	Lower Zambesi . . .	H. M. von Archer.
30	9 (weight 15 lbs. pair)	St. Lucia Bay . . .	Hon. Charles Ellis.
30	9	Shiré River . . .	Surgeon J. Dowson, R.N.
-30	8½	British Central Africa .	A. le H. K. B. Ritchie.
30	9	Zambesia . . .	E. W. Tompson.
30	9	British Central Africa .	R. M. Irwin.
-30	(weight 11 lbs.)	Katungas, Shiré River	E. B. Vertue.
29¾	8¾	Do.	F. C. Selous.
29½	8	Do.	Dr. W. P. Y. Bainbrigge.
29	8½	Shiré River . . .	F. Vaughan Kirby.
28	8½	British Central Africa .	L. G. Ibach.
27½	...	Atbara River, North-East Africa	W. D. James.
27	8	East Africa . . .	E. Gedge.
26	7¾	Niger. . . .	Major J. A. Burdon.

Straight Tusks.

-20	...	Lower Zambesi . . .	H. M. von Archer.
18½	6½	Nigeria . . .	Major J. A. Burdon.

¹ Malformed.² Straight tusk 19 ins. long.



Abnormal Lower Tusk of Wild Boar.

WILD BOAR (*Sus scrofa* and *S. cristatus*).

Most of the European and Asiatic species of wild swine, forming the typical group of the genus *Sus*, are so like each other, that it is often a matter of difficulty to discriminate between them, and naturalists are not yet in accord as to the number of species which should be recognised. The European wild boar is a large coarsely-haired species, with an under-coat of woolly fur, no warts on the face, and standing about 33 inches at the shoulder. It lacks the crest or mane of long black bristles running from the nape down the back in its Indian cousin; and the last tooth in the lower jaw is of a rather less complex structure than in the latter (*S. cristatus*).

A Spanish boar killed by H.R.H. le Duc d'Orléans weighed 302 lbs.

Distribution.—Europe, Asia Minor, North-East Africa, and India.

Tusks.

Length on outside curve.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
12	Albania	Lord Carnegie.
11½	Caucasus	Col. Veernhof.

Length on outside curve Right.	Length of tusk out of gum. Left.	Locality.	Owner.
-11 $\frac{1}{4}$	...	Caucasus	Capt. Robert Finnie.
9 $\frac{3}{4}$	...	Asia Minor	Admiral Sir Michael Culme Sey- mour, Bart.
¹ 9 $\frac{5}{8}$	...	Caucasus	Prince E. Demidoff.
9 $\frac{1}{2}$	...	Do.	Do.
9	...	Albania	Sir Reginald Cathcart, Bart.
-8 $\frac{5}{8}$	...	Algeria	Sir Edmund G. Loder, Bart.
² -8 $\frac{1}{2}$	8 $\frac{1}{8}$	3 Near Bona, Algeria	Viscount Edmond de Poncins.
-8 $\frac{1}{8}$	...	Algeria	Capt. John Marriott.
8	2 $\frac{1}{2}$	Russia	Count J. Potocki.
		¹ Weight 372 lbs.	² Weight 275 lbs. clean.

The following specimens belong to the Indian species:—

Length on outside curve.	Locality.	Owner.
-14 $\frac{3}{4}$ (malformed)	Purneah, Lower Bengal	H. R. P. Carter, recorded in <i>Field</i> , 19th January 1895. (See illustration, p. 422.)
-14 $\frac{3}{8}$	Hills above Jamu	Col. Sir Neville Chamberlain.
-10 $\frac{5}{8}$	North Kanara	Bombay Natural History Society.
-10 $\frac{1}{2}$	Burma	Mrs. O. F. Wheeler-Cuffe.
-10 $\frac{1}{2}$	?	Meerut Tent Club
-10	India	The late Sir Samuel Baker.
-9 $\frac{3}{4}$	?	Meerut Tent Club.
9 $\frac{3}{4}$	?	Dr. Travers.
9 $\frac{1}{2}$	Burma	Langford Whitehouse.
9 $\frac{3}{8}$	North Kanara	Lieut.-Col. L. L. Fenton.
9 $\frac{3}{8}$	Central Provinces	Lieut.-Col. J. S. Ashby.
9 $\frac{1}{8}$	Ceylon	Capt. F. H. N. Pym.
9 $\frac{1}{4}$	Central Provinces	The late J. Moray-Brown.
8 $\frac{1}{2}$	Jumna Valley	The late Capt. F. C. Quicke.
8 $\frac{1}{2}$	Bengal	Surg.-Capt. J. M'Kie.
-8.30	Assam	Viscount Edmond de Poncins.
-8 $\frac{1}{4}$	Bikanir	H.H. the Maharajah of Bikanir.
-7.85	Assam	Viscount Edmond de Poncins.

RECORDS OF BIG GAME

Length on
outside curve.

Locality.

Owner.

8

?

Capt. P. A. Bainbridge.

7 $\frac{1}{4}$

Mhou

H. Dibble.

7 $\frac{1}{4}$

?

H.H. the Maharajah of Bikanir.



Head of Wild Boar.

CAPE BUSH-PIG (*Sus* [*Potamochoerus*] *choeropotamus*).

Bosch-vark of the Boers. *Ingulubi* of the Swazis and Zulus.

The bush-pigs, or river-hogs, of Africa and Madagascar form a peculiar group of swine characterised by having only 42, in place of 44, teeth, small tusks, and a large ridge-like prominence on each side of the face, due to the presence of a ridge of bone on the sheath of the tusk. The ears may be surmounted with tufts of long hair. The various species are best distinguished by the character of their skulls, colour forming a very uncertain guide. The Cape bush-pig, or *bosch-vark*, is very generally gray, but the late Sir Andrew Smith stated that "scarcely any two specimens of this species exhibit the same colours; some are a brownish black variegated with white, and others are almost entirely of a light reddish brown or rufous tint, without any white markings; indeed, such are the varieties that it is scarcely possible to say what are the prevailing colours." In British Central Africa, where they have been wrongly identified with the West African species, they are invariably reddish. Height at shoulder about 31 inches; weight, 35 lbs. Lower tusks average 6 to 7 inches long, and a good specimen shot by Mr. F. Vaughan Kirby had tusks protruding out of jaw $4\frac{3}{8}$ inches.

Distribution.—South and South-East Africa.

WEST AFRICAN BUSH-PIG or RED RIVER-HOG

(*Sus* [*Potamochoerus*] *porcus*).

In this species the colour is always some shade of rufous, either shining brownish red with a tinge of yellow, or dark reddish yellow with black on the forehead, ears, and limbs, the mane of the back, part of the margins of the ears, tips of the long tufts of hairs with which they are surmounted, and streaks above and below the eyes white.

Distribution.—West Africa, from Angola to Senegambia, and eastwards to Monbuttu.

Height at shoulder.	Weight.	Locality.	Owner.
-23 $\frac{1}{2}$	35 lbs.	Shiré River, British Central Africa	Dr. Percy Rendall.

BABIRUSA (*Babirusa alfurus*).

The pig-deer (to translate its Malay name) is not the least notable of several remarkable animals restricted to Celebes; the peculiar form and position of the upper tusks of the boars rendering them almost comparable to horns. Unlike other pigs, in which they curve upwards from the sides of the lips, the tusks grow from the centre of the muzzle, piercing through the skin, and as they are not worn by the lower pair, attain extraordinary dimensions. Both pairs are quite devoid of enamel; the lower ones growing from the sides of the jaw in the ordinary manner. The cheek-teeth are somewhat less numerous than in ordinary pigs. In other parts of its organisation the babirusa is, however, very like the latter, although its nearly naked skin is remarkable for its coarse and rugged nature, being almost comparable to the bark of a tree. The height at the middle of the back, the highest point of the animal, is about 42 inches. Unlike the rest of its tribe, the female babirusa produces only a pair of young at a birth, which are of the same uniformly slaty hue as their parent. Babirusa are confined to the island of Celebes, where they afford good sport to the natives, who drive them into nets and then spear them.

Dr. F. H. H. Guillemard recorded in the *Cruise of the "Marchesa"*:

Weight, male, 128 lbs.; female, 85 lbs.

Height at shoulder, $27\frac{1}{2}$ in.; female, $25\frac{1}{2}$ in.

Length.		Owner.
Upper tusks.	Lower tusks.	
-17	...	H. Van Son.
$16\frac{3}{4}$	$13\frac{1}{2}$	Rowland Ward.
$-14\frac{1}{2}$	...	Dr. F. H. H. Guillemard.
$-13\frac{1}{4}$	15	Imperial Museum, Vienna.



Tusks of Male Wart-Hog, Mr. F. H. Barber's specimen.

WART-HOG (*Phacochoerus æthiopicus*).

<i>Bango</i> or <i>Nguruwe</i> of the Swahilis.	<i>Ngolobwi</i> in Ngamiland.
<i>Ikulubi</i> of the Basutos.	<i>Injiri</i> in the Chilala and Chibisa
<i>Indaigazana</i> of the Swazis and	countries.
Zulus.	<i>Vlak-vark</i> of the Boers.
<i>Karkary</i> of the Somalis.	<i>Darungu</i> of the Hausas.
<i>Ngolobwi</i> in Barotsiland.	

For downright ugliness the African wart-hog is hard to beat, and as it is well armed and possesses a bad temper, it is in all respects an undesirable acquaintance. The name is derived from the presence of three pairs of wart-like protuberances on the sides of the face between the eyes and the tusks; the head itself being characterised by the disproportionate length and flatness of the face. Unlike the true pigs, the stout upper tusks are longer than the lower pair; the inferior surfaces of their basal halves being worn to smooth facets by the points of the latter. Another peculiarity of the upper tusks is that they have no enamel, except at the extreme tips, which are soon worn off by use. But a further peculiarity is presented by the last molar teeth of each jaw, which, together with the tusks, are often the only teeth remaining in very old animals. They are both long and tall, consisting of a number of closely-packed cylindrical columns of enamel,

which, when worn, present a characteristic pattern. Except along the neck and back, where it carries a mane of bristly hair, the skin is nearly naked; and the young differ from those of ordinary pigs in being neither striped nor spotted. Height at shoulder, 30 inches.

Distribution.—The wart-hog is typically an inhabitant of South and South-East Africa. Animals of the same genus extend, however, right through East and Central Africa to Abyssinia; those from the latter country having been described as a distinct species, under the name of *P. africanus*. Not improbably, however, the northern animal is only a local race of the southern form. Wart-hogs, possibly from their habit of going to ground when pursued, are but seldom hunted with the spear; "pig-sticking" being, in fact, a sport practically unknown in Africa. The lower tusches seldom exceed 6 inches on the front curve.

Upper Tusks.

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
-27 } 26 }	...	Annesley Bay . . .	Capt. Ralph Berners, R.N.
20	17 $\frac{3}{4}$	South Africa . . .	F. H. Barber.
-16 $\frac{1}{4}$	13 $\frac{1}{2}$	?	J. Whitaker.
-15 $\frac{1}{2}$	13 $\frac{1}{2}$	Matanari Bush . . .	F. Vaughan Kirby.
15	13 $\frac{1}{2}$	British Central Africa . .	R. H. Storey.
-15	...	South-East Africa . . .	W. Russell Bowker.
14 $\frac{3}{4}$	...	British Central Africa . .	John Yule.
...	13 $\frac{3}{4}$	Zambesia . . .	R. J. Cuninghame.
13 $\frac{1}{8}$	...	Somaliland . . .	Capt. B. R. M. Glossop.
...	13	South-East Africa . . .	F. C. Selous.
-12 $\frac{1}{2}$	10 $\frac{1}{2}$	?	P. C. Keytel.
...	11 $\frac{3}{4}$	Somaliland . . .	Viscount Edmond de Poncins.
-12	...	East Africa . . .	C. Steuart Betton.
-12	...	South-East Africa . . .	James Meldrum.
...	11 $\frac{1}{2}$	East Africa . . .	Capt. M. M'Neill.
...	-11 $\frac{1}{2}$	South-East Africa . . .	Julius Jeppe.
-11 $\frac{1}{2}$	...	Do. . .	James J. Harrison.

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
...	11	Rhodesia	George Grey.
...	10 $\frac{3}{4}$	Mashonaland	S. Chillingworth.
-11	...	East Africa	Count Scheibler.
11	...	British Central Africa .	Major R. Skeffington Smyth.
...	10 $\frac{3}{4}$	Barotsiland	Col. C. Harding.
...	10 $\frac{1}{2}$	East Africa	Douglas M'Douall.
...	10 $\frac{1}{2}$	Do.	H. Hyde Baker.
...	10 $\frac{1}{4}$	Near Ruw River, South- east Africa	C. C. Bowring.
10 $\frac{1}{2}$	...	Somaliland	W. R. Bindloss.
...	9 $\frac{3}{8}$	... . . . .	W. W. Ashley.
...	9	Pungwe	Count E. Hoyos.
...	9	Somaliland	Prince Boris Czetwertynski.
...	9	Do.	A. E. Butter.
...	9	Sudan	Prince Colloredo Mansfeld.

Lower Tusks.

-9 $\frac{1}{2}$	...	Somaliland	J. D. Inverarity.
-9 $\frac{1}{2}$	...	Do.	Viscount Edmond de Poncins.



Horn of Indian Rhinoceros.



Record Horn of Indian Rhinoceros. Shot by Lord Curzon.

INDIAN RHINOCEROS (*Rhinoceros unicornis*).

In addition to being the giant among its Asiatic kindred and possessing but a single horn, this huge rhino is specially characterised by the form of the folds in its hide, and the large tubercles on the fore- and hind-quarters, which look as though the skin had been fastened to the body by means of rivets. A fold before and behind the shoulder marks off one large triangular shield on each side, while another fold before each thigh separates a large rump-shield; the saddle-shaped body-shield being defined by the fold behind the shoulder and the one in front of the thigh, both of which extend across the back. Very characteristic, too, are the great folds which form heavy rings of skin round the neck. Although the tubercles are largest on the fore- and hind-quarters, they also occur on other parts of the body. Height at shoulder from 5 feet 8 inches to at least 6 feet; girth, 105 inches. The late Dr. T. C. Jerdon mentions 24 inches as the length of a fine horn.

MAHARAJAH OF COOCH BEHAR'S SPECIMENS

Height at shoulder . . .	6 ft. 4 $\frac{1}{4}$ ins.	6 ft. 1 in.	6 ft. $\frac{1}{2}$ in.
Total length . . .	14 ft. 1 in.	13 ft. 2 ins.	13 ft. 10 ins.
Body . . .	11 ft. 11 ins.	11 ft. 2 ins.	11 ft. 8 ins.
Girth behind shoulder . .	119 ins.	112 ins.	
Biggest girth . . .	144 ins.	142 ins.	
Round neck nearest body	90 ins.	84 ins.	
" " head	74 ins.	75 ins.	
Horn . . .	16 $\frac{1}{4}$ ins.	13 $\frac{7}{8}$ ins.	

Distribution.—Chiefly the Assam plain at the present day. At one time this animal was found over the greater part of the Indian peninsula, as attested by fossil remains, but now it is restricted to Assam; its place farther south in the Sanderbans, Chittagong, and Burma being taken by the smaller *R. sondaicus*.

Length on front curve.	Circumference.	Weight.	Locality.	Owner.
-21 $\frac{1}{2}$	24 $\frac{3}{4}$	...	Nepal . . .	Lord Curzon.
19 $\frac{3}{8}$	22 $\frac{3}{8}$	...	India . . .	British Museum.
♀ 18	16	...	Assam . . .	M. H. Logan.
16 $\frac{3}{4}$	...	...	Belsire, Assam . .	W. C. Sherwill.
♀ 16 $\frac{1}{2}$	...	...	Cooch Behar . . .	H. H. the Maharajah of Cooch Behar.
♀ 16	...	3 $\frac{1}{2}$ lbs.	Nowgong, Assam . .	L. Fabre Tonnerre.
14 $\frac{1}{2}$	21	...	Assam . . .	Dr. W. P. Y. Bainbrigge.
♀ 14	22 $\frac{7}{8}$	4 $\frac{1}{2}$ lbs.	Nowgong . . .	L. Fabre Tonnerre.
-13 $\frac{7}{8}$	...	...	Cooch Behar . . .	Maharajah of Cooch Behar.
¹ 13	...	...	Do. . . .	Do.
13	20 $\frac{1}{2}$	...	Assam . . .	G. A. Dolby.
12 $\frac{3}{4}$	23	...	Do. . . .	H. B. Firman.
12 $\frac{1}{2}$	21 $\frac{5}{8}$	...	Do. . . .	H. C. Holland.
-12 $\frac{1}{2}$	15 $\frac{1}{2}$	...	Cooch Behar . . .	James J. Harrison.
12 $\frac{1}{2}$	21	...	?	J. W. Grieve.
12	21 $\frac{1}{2}$	...	Cooch Behar . . .	A. Ezra.
11	20	...	Do. . . .	Capt. Hon. W. Lambton.
11	17 $\frac{3}{4}$	...	?	R. S. Hamilton.
-10 $\frac{3}{4}$	21 $\frac{3}{4}$	...	Foot of Garo Hills .	A. O. Hume.
10 $\frac{3}{8}$	17	...	?	Earl of Dunmore.
10	...	...	Cooch Behar . . .	Duke of Portland.
9	16 $\frac{1}{2}$	...	Do. . . .	P. B. Vander-Byl.
-♀ 8 $\frac{3}{4}$	8	...	Do. . . .	Countess Scheibler.

¹ Height at shoulder, 6 ft. 6 ins.

JAVAN RHINOCEROS (*Rhinoceros sondaicus*).

A less gigantic and smaller-headed species than the last, with the skin divided up into a kind of mosaic pattern, and the fold in front of the shoulder continued right across the body like the two hinder folds. The neck also lacks the large ring-like masses of folded skin. Horn never very large, and generally almost or completely wanting in the female. A female has been measured which stood $5\frac{1}{2}$ feet at the shoulder, and it is probable that the male stands not very much less than the Indian species, although it is of lighter build.

Distribution.—The Sanderbans and other parts of Eastern Bengal, to the Terai, Sikhim, Assam, and thence through Burma and the Malay Peninsula to Sumatra, Java, and Borneo.

Length on front curve.	Circumference.	Locality.	Owner.
10 $\frac{5}{8}$	19 $\frac{5}{8}$	Java	British Museum.
10 $\frac{5}{8}$	19 $\frac{1}{2}$	Do.	H. Van Son.
8 $\frac{1}{4}$	20	Do.	A. S. Campbell.

SUMATRAN RHINOCEROS (*Rhinoceros sumatrensis*).

The smallest of the Asiatic rhinos, and the only one with two horns ; differing, however, from the African members of the genus by the folds in the skin and the presence of teeth in the front of the jaws. Only the fold behind the shoulders is continued across the back, and the brown or black skin is rough, granular, and more or less hairy. Height at shoulder from about 4 feet to $4\frac{1}{2}$ feet ; weight about 2000 lbs.

Distribution.—From Assam (where the species is very rare) to Siam, the Malay Peninsula, Sumatra, and Borneo. The Assam form is a distinct local race (*R. sumatrensis lasiotis*).

Length on front curve.	Circumference.	Owner.
32 $\frac{1}{8}$	17 $\frac{3}{8}$	British Museum.
27 $\frac{1}{8}$	17 $\frac{1}{8}$	Do.



Horns of Common African Rhinoceros, from Mr. S. L. Hinde's specimens.

COMMON AFRICAN RHINOCEROS (*Rhinoceros bicornis*).

Aurarisse of the Abyssinians.
Chipamberi of the Lower Zambesi
 natives.
Chipembere of the Chilalas.
Favu of the Swahilis.
Gurhu of the Danakil tribes.
Muin of the Masais.

Sipejana of the Swazis and Matonga.
Upejana of the Matabili and Zulus.
Upelepe of the Basutos.
Wärtses of the Gallas.
Weel of the Somalis.
Zwart Rhinoster of the Boers.

The African rhinoceroses are two-horned animals, readily distinguished from their Asiatic relatives by the absence of the folds of skin on the body which form such a characteristic feature of the latter ; as they also are by the lack of front teeth in both the upper and lower jaws. The hide, too, is almost completely naked, although there are some bristly hairs on the margins of the ears and the tip of the tail.

Perhaps the most distinctive external feature of the black rhinoceros, as the present species is commonly called, is to be found in the prehensile tip to the upper lip, which is rounded and not very wide in front. Other points of distinction are, however, shown by the form of the horns and ears and the position of the eyes ; while in bodily size

this animal is also considerably inferior to the next. The black rhinoceros is also well characterised by the comparative shortness of its skull, and the form and structure of the molar teeth, which are adapted for a diet of twigs and leaves. Average height at shoulder, 5 feet.

Major Edgar G. Harrison, writing in the *Field*, December 25, 1897, records the measurements of a five-horned Rhinoceros shot by him in East Africa as follows :—



Head of Common African Rhinoceros.

First Horn.—Counting from snout, measurement $14\frac{3}{4}$ in.; is a normal front horn curving backwards.

Second Horn.— $15\frac{1}{4}$ in., curving forwards instead of backwards or being straight, as is usual, and leaning considerably over to the off-side.

Third Horn.— $11\frac{1}{4}$ in. long and $5\frac{1}{2}$ in. wide half-way between base and apex; is flat and perpendicular, and, though a distinct horn, grows out of the off-side of the base of No. 2.

Fourth Horn.—Is a stumpy, abortive horn, 9 in. long, growing partly from the base of No. 3, but quite separate and inclining slightly backwards.

Fifth Horn.—A distinct horn, $9\frac{3}{4}$ in. long, with its own base separated about 3 in. from No. 4.

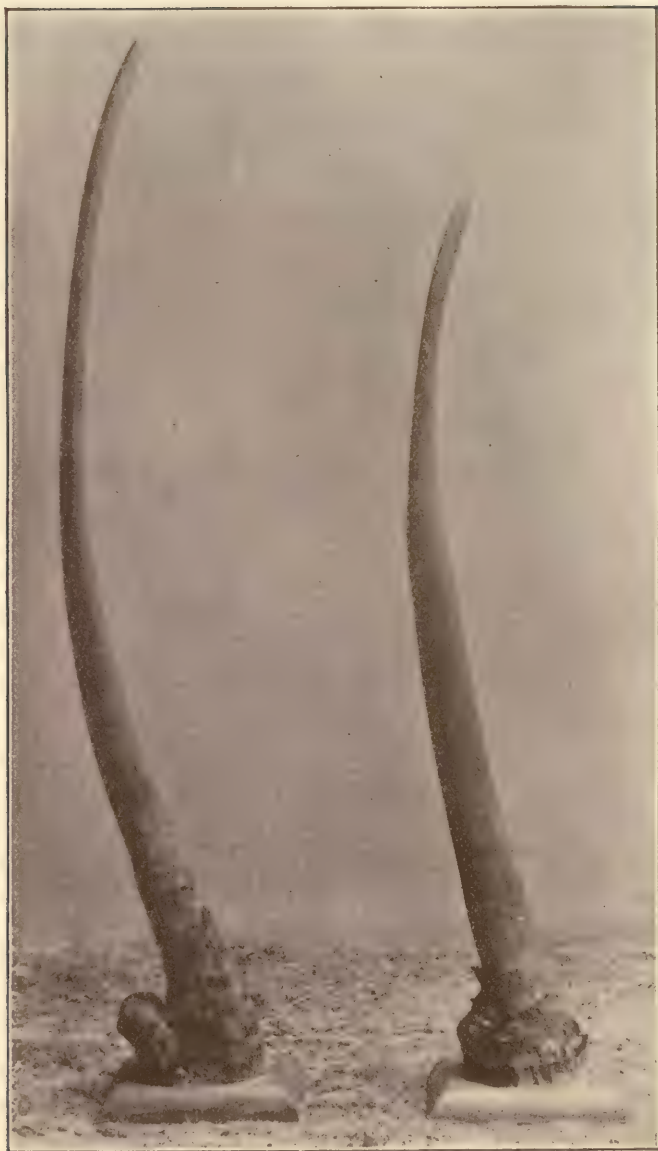
Distribution.—From Abyssinia and Somaliland through East and Central Africa, in suitable localities, to the Cape. Now rare to the south of the Zambesi, and probably more abundant in the districts between the interior of Somaliland and Lake Rudolf than anywhere else. Although more alert and active than Burchell's rhinoceros, and thus a more dangerous animal, this species is by no means difficult to kill with modern weapons; and in the old days hunters frequently shot half-a-dozen in a single evening as they came to drink at a pool. In spite of its wide distribution, it has not been found possible to split up the species into local races; although this may perhaps be due to the want of sufficient specimens for comparison. The so-called *Rhinoceros holmwoodi* is a variety of this species.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
53½	...	18½	...	East Africa . .	Dr. C. H. Orman.
47	22½	22	20	Do. . .	S. L. Hinde.
-44½	...	...	...	?	Imperial Museum, Vienna.
44	...	...	...	?	The late F. Holmwood.
43	...	21½	...	?	A. Beit.
41½	10	20½	16½	Zululand . .	Lieut.-Col. Hon. W. Coke.
-41½	...	22½	...	Orange River . .	Major-Gen. Sir William Crossman.
-41	...	...	...	?	Carl Hagenbeck.
41	...	...	...	East Africa . .	The late F. Holmwood.
-40	...	22	...	Do. . .	Berlin Museum.
40	14¾	18½	20½	Mt. Kenia, East Central Africa	A. H. Neumann.
-39½	...	21½	...	South Africa . .	J. Lamont.
38¾	...	21	...	?	Hon. Walter Rothschild.
38½	...	19	...	Masailand . .	Sir John Kirk.
-38	11	24	21¾	South Africa . .	Earl of Dartmouth.
-36	...	...	...	East Africa . .	Sir Bartle Frere, Bart.
-35½	...	18	...	?	H. Murray.
♀ 33½	...	17½	...	Matabililand . .	W. Van Ness.
-32½	21	19	15½	Portuguese Northern Zambesia	F. Vaughan Kirby.

RECORDS OF BIG GAME

Length on outside curve.		Circumference.		Locality.	Owner
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
-32	11 $\frac{3}{4}$	19 $\frac{7}{8}$	19 $\frac{1}{2}$	Athi Plains, East Africa	Count Scheibler.
31	...	18	...	East Africa	R. P. Carroll.
31	19 $\frac{1}{2}$	16	16 $\frac{1}{8}$	Do.	H. C. V. Hunter.
-30 $\frac{3}{4}$	8 $\frac{3}{4}$	18 $\frac{1}{2}$	16 $\frac{3}{8}$	German East Africa	O. Neumann.
30	...	20 $\frac{1}{4}$	...	East Africa	R. Meinertzhagen.
29 $\frac{1}{2}$	...	18 $\frac{3}{8}$	...	Somaliland	Julius Jeppe.
-29 $\frac{1}{2}$	14 $\frac{1}{2}$	...	...	Do.	A. H. Straker.
28 $\frac{1}{2}$	...	18	...	South Africa	C. D. Rudd.
28 $\frac{1}{4}$	...	23 $\frac{1}{2}$	...	East Africa	C. Fendelow.
28 $\frac{1}{4}$	8 $\frac{3}{4}$	18 $\frac{1}{8}$	...	South Africa	F. C. Selous.
27 $\frac{1}{2}$	17 $\frac{3}{4}$	21	18	East Africa	H. Hyde Baker.
27 $\frac{1}{4}$	10	21	17	Masailand	Capt. R. A. J. Montgomerie, R.N.
27	...	20 $\frac{1}{2}$	...	East Africa	E. Gedge.
27	16 $\frac{1}{2}$	17 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	Sir Robert Harvey, Bart.
27	12	...	...	Do.	Sir John Willoughby, Bart.
26 $\frac{3}{4}$	13 $\frac{1}{4}$	22	...	?	Sir Edmund G. Loder, Bart.
26 $\frac{1}{2}$	10 $\frac{1}{2}$	19 $\frac{1}{2}$	15	East Africa	Henry Charrington.
26	13	20 $\frac{1}{4}$	23 $\frac{1}{2}$	Do.	C. Craig.
26	9	18	17	Do.	Major M. Tighe.
26	10	20 $\frac{1}{2}$	19	Do.	F. W. Belt.
♀ 25 $\frac{3}{4}$	17	16	15	East shore of Lake Rudolf	A. H. Neumann.
25 $\frac{1}{2}$	8 $\frac{1}{2}$	21 $\frac{1}{2}$	19	East Africa	Sir Clement Hill.
25 $\frac{3}{8}$	9 $\frac{1}{8}$	17 $\frac{3}{8}$	...	Do.	F. J. Jackson.
♀ 24 $\frac{1}{2}$	12	16	17 $\frac{1}{2}$	Masailand	Capt. R. A. J. Montgomerie, R.N.
23 $\frac{1}{2}$	10	20 $\frac{3}{8}$	17 $\frac{3}{4}$	East Africa	A. E. Butter.
23 $\frac{1}{2}$	...	21	...	Do.	Hon. Walter Rothschild.
23	21	18	19	Do.	Count E. Hoyos
22 $\frac{1}{2}$	14 $\frac{1}{2}$	17	16 $\frac{1}{2}$	Somaliland	Julius Jeppe.
22 $\frac{1}{4}$	10	22 $\frac{3}{4}$	19	Do.	Sir H. D. Tichborne, Bart.
22	6 $\frac{3}{4}$	17 $\frac{1}{4}$	16	Do.	Lieut.-Col. H. D. Olivier.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
21 $\frac{3}{4}$	11 $\frac{3}{8}$	19	19	Somaliland . . .	J. Kenneth Foster.
21 $\frac{2}{3}$	17	14	16	Abyssinia . . .	British Museum.
-20 $\frac{1}{2}$	9 $\frac{1}{4}$	21 $\frac{3}{4}$	19 $\frac{7}{8}$	Somaliland . . .	Count E. Hoyos.
20	11 $\frac{1}{2}$	21 $\frac{1}{2}$	18	Do. . . .	J. Byng Paget.
20	6 $\frac{3}{4}$	20 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	Major H. G. C. Swayne.
-20	8 $\frac{1}{4}$	23 $\frac{1}{2}$	21 $\frac{7}{8}$	Do. . . .	Count E. Hoyos.
13	6 $\frac{3}{4}$	17 $\frac{1}{4}$	16 $\frac{1}{2}$	Abyssinia . . .	O. Neumann.



Front Horns of Burchell's Rhinoceros.

From specimens in the collection of the late Roualeyn Gordon Cumming, in the possession of Col. W. Gordon Cumming.

BURCHELL'S RHINOCEROS (*Rhinoceros simus*).

Next to the Indian elephant this is the largest mammal that has trodden the earth in modern times. Its huge bulk, bluntly truncate muzzle, which has no prehensile tip, the great length of the skull, and the enormous front horn, with its expanded base, form the most striking external characteristics of this species. The cheek-teeth are of quite a different type of structure from those of the preceding species, being, in fact, adapted for chewing grass. In walking, the animal carried its head low, so that in examples in which the front horn bends forward, its tip became worn by being pushed along the ground. It is difficult to surmise the reason for the application of the name "white rhinoceros" to this species.

Distribution.—South and South-East Africa, in suitable localities, as far north as the Zambesi; and again in Central Africa at Lado, on the equator. Exterminated early in the last century to the south of the Orange River; and now represented in South Africa at the most by a few survivors in North-East Mashonaland, and possibly by others in the reedy swamps at the junction of the Black and White Umvolosy rivers. Between the Zambesi and Orange rivers the species was abundant less than half a century ago; Andersson alone having killed sixty in the course of a few months. When it was supposed to be all but exterminated, its existence in the neighbourhood of Lado was made known by Major Gibbons. This northern form may prove to be a distinct race.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
-62½	...	22½	...	South Africa . . .	Col. W. Gordon Cumming.
56½	...	23½	...	Do. . . .	British Museum.
-52½	...	about 21½	...	Do. . . .	Col. W. Gordon Cumming.
44	...	20	...	?	British Museum.
43¾	...	23¾	...	South Africa . . .	A. Beit.
42¾	25⅞	Limpopo . . .	The late W. C. Oswell.
-41	South Africa . . .	J. W. Fitzherbert.
40¾	...	29¾	...	Do. . . .	Sir Edmund G. Loder, Bart.
40½	...	20¾	...	?	Hon. Walter Rothschild.
-40½	...	22½	...	South Africa . . .	Sir Edmund G. Loder, Bart.

RECORDS OF BIG GAME

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
40	...	15 $\frac{3}{4}$	...	South Africa . .	British Museum.
39 $\frac{1}{8}$	...	23	..	?	Lord Delamere.
-39	...	...	...	?	A. Ohlsson.
♀ 38 $\frac{3}{8}$	...	24 $\frac{1}{2}$	...	?	The late W. C. Oswell.
38 $\frac{1}{4}$	...	22 $\frac{1}{4}$	...	?	J. B. Taylor.
37 $\frac{3}{8}$	17 $\frac{7}{8}$	27 $\frac{1}{8}$	...	Mashonaland .	F. C. Selous.
37 $\frac{3}{8}$	...	...	...	?	C. Fendelow.
37 $\frac{1}{4}$	...	24	...	South Africa . .	British Museum.
-36 $\frac{3}{4}$	...	20 $\frac{1}{2}$	...	?	Berlin Museum.
36	...	28 $\frac{1}{2}$	...	Mashonaland . .	C. D. Rudd.
36	...	25 lbs.	...	?	Rev. V. R. Carter.
¹ 35 $\frac{1}{2}$	7 $\frac{5}{8}$	26	21	Mount Domo, Ma- shonaland	South-African Museum (the late Cecil Rhodes).
35	...	28	...	?	C. Fendelow.
-33 $\frac{1}{2}$	...	23	...	?	Julius Jeppe.
33	13 $\frac{1}{8}$	23 $\frac{1}{4}$	...	Mashonaland . .	F. C. Selous.
32	13	27 $\frac{1}{4}$	25 $\frac{1}{2}$	Near Lado . .	Capt. the Hon. M. P. Macnaghten.
31 $\frac{1}{8}$	...	19 $\frac{1}{2}$	...	?	Mr. Justice Hopley.
31	...	24	...	Zululand . .	Lieut.-Col. Hon. W. Coke.
31	...	22	...	Mashonaland . .	J. G. Griffiths.
30 $\frac{3}{4}$	...	25 $\frac{3}{4}$	...	White Nile . .	Capt. C. J. Hawker.
-30 $\frac{3}{4}$	...	25 $\frac{1}{4}$	...	South Africa . .	Col. H. B. H. Blundell.
¹ ♀ 29 $\frac{3}{4}$	5 $\frac{1}{2}$	23	20 $\frac{1}{2}$	Zululand . .	Pretoria Museum (Julius Jeppe).
¹ 29	10	25	23	White Nile . .	Major R. M. Sanders.
27 $\frac{3}{8}$	12	22 $\frac{3}{4}$	18 $\frac{1}{4}$	Zululand . .	Julius Jeppe.
27	11 $\frac{3}{4}$	30 $\frac{3}{8}$	25	Do. . .	Sir Edmund G. Loder, Bart.
26 $\frac{1}{2}$	...	21 $\frac{3}{8}$	..	White Nile . .	Maj.-Gen. Sir F. R. Wingate.
¹ 22 $\frac{1}{2}$	7 $\frac{1}{2}$	26 $\frac{1}{4}$	...	Mashonaland . .	Hon. Walter Rothschild.
21 $\frac{1}{4}$	...	18 $\frac{3}{4}$	...	Sudan . .	Capt. J. G. A. Massy.
¹ 20 $\frac{3}{4}$	7	28 $\frac{3}{4}$	...	Mashonaland . .	British Museum.
¹ 20	6	25 $\frac{1}{2}$	18 $\frac{1}{2}$	Zululand . .	H. R. H. le Duc d'Orléans.

¹ Mounted specimens.



From a Photograph by Mr. Eales, Reading.

Skull and Horns of Burchell's Rhinoceros.
Shot by F. C. Selous in Mashonaland, 1880.



INDIAN ELEPHANT (*Elephas maximus*).

In general a decidedly smaller animal, the Indian elephant differs from its African relative not only in external form, but also in the structure of its molar teeth, which are composed of a greater number of much thinner vertical plates. The females, as a rule, have only very small tusks, not projecting beyond the jaw; and in some cases those of the males are equally poorly developed. Five nails are usually present on the fore-feet, and four on the hinder ones. Externally, the most characteristic distinction is the comparatively small size of the ears; next to which comes the presence of a finger-like process on the front edge only of the tip of the trunk; the African species having one in front and a second behind. The skin is nearly smooth; and the

bristles on the tail are confined to the front and back edges for some distance above the tip. Other noticeable points are the comparative flatness of the forehead, and the regular convex form of the back, as well as the perfect flexibility of the trunk, which may be compared in structure to an india-rubber tube. Although males do not generally exceed 9, and females 8 feet in height, specimens have been killed measuring 9 feet 10 inches, 10 feet 1 inch, and 10 feet $7\frac{1}{2}$ inches, while one is stated to have reached 11 feet, and there is evidence of still larger individuals, perhaps of 12 feet.

Distribution.—The forest districts of India, Ceylon, Assam, Burma, Malay Peninsula, Siam, Cochin China, Sumatra, and Borneo. The Sumatran elephant may possibly form a peculiar local race.

Height.

At Shoulder. ft. in.	Locality.	Owner.
-11 0	Mysore	Viscount Powerscourt.
-10 6	Burma	H. Shaw Dunn.
-10 4	Gurhwal, N.W.P.	Col. J. E. Campbell.
-10 1	Ceylon	James J. Harrison.
-10 1	?	Major-General A. A. A. Kinloch.
-9 8	Southern India	F. Gompertz.
-9 7	Mysore	The late G. P. Sanderson.

Tusks.

Length out- side curve. ft. ins.	Greatest cir- cumference. ins.	Weight. lbs.	Locality.	Owner.
-8 9 R	17 $\frac{1}{2}$	81	Assam	The late Lord Lytton.
-8 9	...	...	Burma	Government House, Rangoon.
-8 6	...	...	Do.	Do.
-8 2 L	...	80.2	Assam	The late Lord Lytton.
8 0	16 $\frac{7}{8}$	90	S. India	Sir Victor Brooke's Collection.
¹ 7 3 $\frac{3}{4}$	17 $\frac{1}{2}$	102	Burma	Marquis of Waterford.
7 3 $\frac{1}{4}$	17 $\frac{1}{8}$	97 $\frac{1}{2}$	Do.	Do.
6 11	15 $\frac{1}{2}$	106	Do.	R. Gordon Smith.
6 6	15 $\frac{1}{2}$			
6 10	17 $\frac{1}{2}$			
		65 $\frac{5}{8}$	India	Bethnal Green Museum (J. D. Goldingham).

¹ The tusks of the sacred white elephant from King Thebaw's Palace, Mandalay.

RECORDS OF BIG GAME

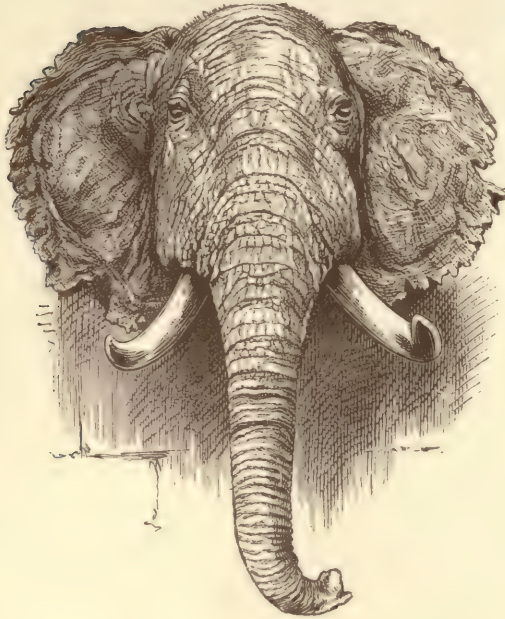
Length out- side curve.	Greatest cir- cumference.	Weight.	Locality.	Owner.
ft. ins.	ins.	lbs.		
-6 8	18 $\frac{3}{4}$	84	Burma . . .	H. Shaw Dunn.
-6 8	...	77 $\frac{1}{2}$	Madura District, S. India	Col. G. M. Payne.
6 7 $\frac{1}{2}$	14 $\frac{3}{8}$	52 $\frac{1}{2}$	Mysore . . .	Viscount Powerscourt.
-6 7	12 $\frac{1}{2}$	46 $\frac{1}{2}$	Yala, S. Provinces, Ceylon	Major R. J. Marker.
6 5	18 $\frac{3}{4}$	83	Burma . . .	H. Shaw Dunn.
-6 4	...	...	Assam . . .	G. H. Moore.
-6 3 $\frac{1}{2}$	...	73 $\frac{1}{2}$	Madura District .	British Museum (Col. G. M. Payne).
6 0 $\frac{1}{2}$ }	...	109	S. India . . .	F. Gompertz.
5 8 }	...			
6 0	...	50	Madras . . .	J. Fortune.
-6 0	...	100	?	The late Charles Redde, <i>P.Z.S.</i> , 1886, p. 184.
5 10	...	...	Borneo . . .	C. M. D. Stewart.
5 8 $\frac{1}{2}$	15 $\frac{1}{2}$	42 $\frac{1}{2}$	Dacca . . .	Dalrymple Clark.
5 8	...	...	Burma . . .	H. A. Kelso.
5 7	...	...	Do. . . .	Do.
5 6	15 $\frac{1}{2}$	42 $\frac{1}{2}$	Dacca . . .	Dalrymple Clark.
-5 3	15	42	Ceylon . . .	W. S. Murray.
-5 1 $\frac{1}{2}$	15	35	Travancore . . .	Hon. E. Stonor.
5 0 $\frac{1}{2}$ }	...	35	Do. . . .	Capt. G. H. Evans.
4 10 }	...	32 $\frac{1}{2}$		
-5 0	...	...	Burma . . .	T. Mumford.
-5 0	...	...	Do. . . .	Capt. Cosens.
4 10	15 $\frac{1}{4}$	32 $\frac{1}{2}$	Travancore . . .	Hon. E. Stonor.
4 10	14	...	Burma . . .	H. Wood.
4 6 $\frac{1}{2}$ }	...	...	Assam . . .	Capt. F. B. Stapleton-Bretherton.
4 5 }	...	...
-4 7	13	...	Travancore . . .	J. D. Rees.
4 6	15	...	Do. . . .	Lord Wenlock.
4 4 $\frac{1}{2}$	15	...	Do. . . .	Do.
¹ 3 11 $\frac{3}{4}$	12 $\frac{1}{4}$	29 $\frac{3}{4}$	Yala . . .	Major R. J. Marker.

¹ Broken end, pair to 6 ft. 7 ins.

Feet.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
-67 $\frac{1}{2}$	...	From living elephant, by Major-Gen. G. W. Hanson.	
62 $\frac{1}{2}$	..	South Arcot District	J. Fortune.
61	20	Travancore	Lieut.-Col. D. M. Lumsden.
-60 $\frac{1}{2}$	...	India	Major-Gen. A. A. A. Kinloch.
60	18	Mysore	Viscount Powerscourt.
-60	...	Gurhwal	B. B. Osmaston.
-59 $\frac{1}{2}$	...	Do.	Do.
58 $\frac{1}{2}$	18	Travancore	Capt. H. L. Cottingham.
58	19	Assam	Capt. F. B. Stapleton-Bretherton.
-58	...	S. India	F. Gompertz.
58	18	Travancore	Hon. E. Stonor.
57 $\frac{3}{4}$	19	Assam	H. C. Holland.
¹ -57 $\frac{1}{2}$	17	Ceylon	R. Gordon Smith.
57 $\frac{1}{2}$	18 $\frac{1}{2}$	Assam	D. D. F. Hosack.
-56	...	Ceylon	E. J. Brooke.
56	17	Do.	G. M. Norrie.
-56	18	Do.	Sir Peter Walker, Bart
-56	17 $\frac{1}{2}$	Do.	T. H. Mann.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	Travancore	Lord Wenlock.
² 55	17	Gurhwal	B. B. Osmaston.
55	17	N.W. Provinces	Capt. G. O. Bigge.
54 $\frac{3}{4}$	18	Pyinmana	H. Partridge.
54 $\frac{1}{2}$	...	Burma	R. Gordon Smith.
54 $\frac{1}{2}$	17 $\frac{1}{2}$	Ceylon	H. Storey.
54 $\frac{1}{4}$	17	Burma	Capt. R. A. Gray.
54 $\frac{1}{4}$	16 $\frac{1}{2}$	Kakhenkote	Capt. H. B. Wilkinson.
53 $\frac{3}{4}$	18 $\frac{1}{4}$	Ceylon	Col. W. H. Walker.
-53	18 $\frac{1}{2}$	Burma	Capt. G. Evans.

¹ Measurements 54 ins. \times 17 ins. when dried.² Measurements 59 $\frac{1}{2}$ when shot.



Head of African Elephant.

AFRICAN ELEPHANT (*Elephas africanus*).

Ärb of the Gallas.

Dakana of the Abyssinians (Dan-
akil).

Marodi of the Somalis.

Njovu in the Chilala and Chibisa countries.

Tlo in Barotsiland.

Thlo in Ngamiland.

Zahon of the Abyssinians.

Temba of the Swahilis.

The African elephant, although still abundant in many regions of Central Africa, in the southern part of the Continent is rapidly approaching extinction. A very remarkable exception to this melancholy process of extermination is, however, to be found in the south and east of Cape Colony, where, since the year 1830, wild elephants have been systematically preserved by Government. Strong troops of these protected elephants still roam the dense and impenetrable jungles of the Addo Bush and the Knysna and Zitzikamma forests. Farther inland the ivory-hunters have for a generation past been so actively employed, that, despite the vast numbers of these great mammals which forty or fifty years ago thronged the interior from the Orange

River northwards, but few troops are now left south of the Zambesi. In all Khama's country of Bamangwato, for instance, where Gordon Cumming, Oswell, and others shot most of their elephants, only one solitary herd remains!

Height at shoulder in straight line.		Total length (trunk to end of tail).		Girth of fore-foot.		Locality.	Owner.
ft.	in.	ft.	in.	ft.	in.		
-11	8½	...	...	...	...	Abyssinia . . .	H. Weld-Blundell.
-11	6	...	...	4	10	Near Wadelai . . .	E. S. Grogan and G. A. S. Cape.
-11	1	17	3	4	11	Mozambique . . .	James J. Harrison.
-11	1	...	...	5	4	Toro, E.C.A. . . .	E. S. Grogan.
-11	0	...	...	...	...	British Central Africa . . .	G. Le H. K. B. Ritchie.
-10	10	...	...	...	...	White Nile	Major R. M. Sanders.
-10	9	¹ 12	8	5	0	Lake Rudolf	A. H. Neumann.
-10	8	...	...	5	0	Mozambique	F. Vaughan Kirby.
-10	8	...	...	4	10	Tana River	Major H. De Prée.
10	7	'Jumbo'	...	...	...	?	Barnum and Bailey.
-10	6½	16	9	4	10	Mozambique	F. Vaughan Kirby.
-10	6	...	...	4	8	Tana River	Capt. C. Hankey.
-10	6	...	...	...	...	S.E. Africa	F. C. Selous.
-10	3	21	0	5	1	Nyasaland	Capt. Sir John Kirk.
-10	0	23	5	...	...	South Africa	H.R.H. the Duke of Saxe-Coburg and Gotha.
-9	7¼	...	...	4	6¾ (dried)	Somaliland	Viscount Edmond de Poncins.
9	5	...	...	...	...	Abyssinia	A. E. Butter.

¹ Length from root of tail to eye, in straight line.

TUSKS.



From a photograph by Mr. J. R. W. Pigott.

The Big Tusk (8 ft. 7½ in., 165 lbs.) presented by the Officers serving in British East Africa to H.R.H. the Prince of Wales on the Occasion of his Marriage.

Length out- Greatest cir-
side curve. cumference. Weight.

Locality.

Owner.

Tusks.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	in.	in.	lbs.		
10	2½	24½	226½	East Africa	British Museum.
9	10	19½	247	Do.	Charles Pulley.
9	5	19			
9	5½	18¾	120	Tana River	Major H. De Prée.
9	0	18¼	117	Do.	Do.
9	5	22½	184	?	Sir Edmund G. Loder, Bart.
9	4	20½	160	E. Africa	Sir John Kirk.
9	4	18	110	Do.	Duke of Westminster.
(tip broken)	-9 4	...	151	Elgayu, E. Africa	F. J. Jackson.
9	3½	18¾	...	Tana River	Sir Robert Harvey, Bart.
-9	3	...	129	?	F. J. Jackson.
9	2¾	20	...	Tana River	Sir Robert Harvey, Bart.
19	0	21¾	161	Do.	H.R.H. the Prince of Wales.
18	11	22½	167	Do.	Do.
9	0	18½	116	N. of Lake Rudolf	A. H. Neumann.
9	0	21	150	Africa	Sir Edmund G. Loder, Bart.
9	0	18½	116	N. of Lake Rudolf	A. H. Neumann.
-8	11	18¾	...	Gallaland	Measured by Viscount Edmond de Poncins.
8	11	17½	90	?	Bethnal Green Museum (H.M. the late Queen Victoria).
-8	11	18½	110	Mt. Elgon, E. Africa	Major J. D. Ferguson.
-8	9	18½	108	Do.	Do.
8	10	18	105	East Africa	Lord Delamere.
-8	9½	...	102	Tana River	Major H. De Prée and Capt. C. Hankey.
-8	0	...	91	Do.	Do.
8	7½	22¾	165	East Africa	H. R. H. the Prince of Wales, K.G.
8	6	18½	100	Do.	Lord Delamere.
8	5	23¾	175	Uganda	Graham Pownall.
8	5	19¾	139½	Bahr-el-Gebel	Major R. M. Sanders.

¹ Presented by H. H. Aga Khan.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	in.	in.	lbs.		
8	1 $\frac{3}{4}$	19 $\frac{3}{4}$	137	Bahr-el-Gebel . .	Major R. M. Sanders.
8	4	...	76	M'bogo . .	E. S. Grogan.
-8	3 $\frac{1}{2}$	...	125	E. C. Africa . .	Major M. L. Hornby.
-8	0	..	127 $\frac{1}{2}$	Do. . .	Do.
8	3	18 $\frac{3}{4}$	81 $\frac{1}{2}$	East Africa . .	Capt. T. W. Greenfield.
8	2	18 $\frac{3}{4}$	80	Do. . .	Do.
-8	1	23	137 $\frac{1}{2}$	Toro . .	E. S. Grogan.
8	1	20 $\frac{1}{4}$	114	N. of Lake Rudolf .	A. H. Neumann.
8	0	22	...	East Africa . .	Major M. Tighe.
7	11 $\frac{3}{4}$	21 $\frac{1}{4}$	138	E. C. Africa . .	A. H. Sharp and E. S. Grogan.
7	11	17 $\frac{5}{8}$	90	White Nile . .	Capt. E. R. Whishaw.
7	0	17	80	Do. . .	Do.
7	10 $\frac{3}{4}$	17 $\frac{1}{2}$	82	Tana River . .	Capt. C. Hankey.
7	2	17 $\frac{1}{2}$	79	Do. . .	Do.
7	10 $\frac{1}{2}$	20	113	Upper Nile . .	Douglas M'Douall.
7	15 $\frac{1}{2}$	20 $\frac{1}{2}$	108	Do. . .	Do.
7	10	19 $\frac{5}{8}$	107	East Africa . .	A. H. Neumann.
-7	9	...	...	M'bogo . .	E. S. Grogan.
7	8 $\frac{1}{2}$	23 $\frac{1}{2}$	160	Africa . .	Chalmers, Guthrie, and Co.
-7	8	...	108	Gallaland . .	Dr. Donaldson Smith.
7	6	...	100	Do. . .	Do.
7	6	17	...	?	Duke of Westminster.
7	3 $\frac{1}{4}$	19 $\frac{1}{2}$	102	East Africa . .	Brig.-Gen. Sir F. J. D. Lugard.
-7	3	18 $\frac{3}{4}$	80	Tana River . .	Capt. C. Hankey.
7	1 $\frac{1}{2}$	18 $\frac{1}{4}$	75	Do. . .	Do.
7	0 $\frac{5}{8}$	17 $\frac{1}{8}$	60 (about)	Kilimanjaro . .	F. J. Jackson, C.B.
7	0	21	118	Wadelai . .	Major M. L. Carleton.
6	3	16 $\frac{1}{2}$	60	Do. . .	Do.
7	0	18 (about)	...	South Africa . .	Lord Chelmsford.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	in.	in.	lbs.		
7	0	20½	112	Upper Nile	Capt. M. F. Gage.
6	9	20	111	Do.	Do.
-6	10	...	106	Sudan	Capt. C. J. Hawker.
-6	2	...	96	Do.	Do.
6	10	19½	80	Upper Nile	Lieut. W. B. Drury, R.N.
6	9½	19½	80	Do.	Do.
6	9	18½	81	Uganda	C. Craig.
6	9	17½	...	Kilimanjaro	F. J. Jackson.
6	8	17	74	?	Julius Juppe.
6	7	16½	...	South-East Africa	F. C. Selous.
6	6	15½	...	B. C. Africa	R. H. Storey.
6	4	...	...	...	...
♀ 6	5½	12½	...	N. of Lake Rudolf	A. H. Neumann.
6	4½	17½	...	East Central Africa	H. S. H. Cavendish.
6	4½	19½	...	Upper Nile	P. B. Vander-Byl.
5	11	20½	...	Do.	Do.
-6	4	19	65	Lake Mweru	Poulett Weatherley.
6	3½	18	60	East Africa	C. Steuart Betton.
6	1	7½	...	Masailand	Sir John Kirk.
(spiral tusk)	5	5½	18½	Near Wadelai	Capt. R. A. Markham.
5	2½	19	...	Do.	Do.
5	0	14½	49	Abyssinia	A. E. Butter.
4	8	14½	47	Do.	Do.
4	11	15	26	Somaliland	A. H. Straker.
4	9½	14½	33½	Do.	Capt. E. W. S. Brooke.
4	8½	13½	...	Do.	Sir Edmund G. Loder, Bart.
4	5	12½	...	Somaliland	Lord Delamere.
4	4	13½	26	Do.	Major J. M'Call Maxwell.

Feet (*see also page 453*).

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
64	20½	Toro	E. S. Grogan.
62	20	East Africa . .	C. Craig.
-60¾	...	Somaliland . .	Capt. M. S. Wellby.
60	19	Wadelai	Major M. L. Carleton.
58¾	19	East Africa . .	Capt. Neill Malcolm.
58½	19	E. C. Africa . .	H. S. H. Cavendish.
-58	21	Tana River . .	Major H. De Pré.
-57½	21	Lake Mweru . .	Poulett-Weatherley.
56½	18½	B. C. Africa . .	C. B. C. Storey.
-56	...	Upper Nile . .	Capt. C. A. Sykes.
54	...	Kilimanjaro . .	F. J. Jackson.
-54	17	Somaliland . .	Count E. Hoyos.
53	17	Do.	Capt. J. M'Call Maxwell.
-51	...	Gallaland . . .	Viscount Edmond de Poncins.
50	17	South Africa . .	F. C. Selous.
49½	17½	Do.	Do.
49½	...	Abyssinia . . .	A. E. Butter.

MAMMOTH or SIBERIAN ELEPHANT (*Elephas primigenius*).

Nearly allied to the Indian elephant, but the plates of the teeth still narrower and more numerous, the tusks spirally twisted, and the skin clothed in woolly fur with long bristles intermixed.

Remains of this species occur in the superficial deposits of Europe and Northern Asia. In the frozen soil of Siberia the skin, flesh, and hair are frequently preserved, and the ivory is often suitable for the purposes of the turner.

Length (outside curve).	Greatest Circumference.	Weight.	Locality.	Owner.
ft. in.	in.	lbs.		
12,	19	...	?	Hon. Walter Rothschild.
11 5	17 $\frac{3}{4}$	...	?	Do.
11:	20 $\frac{7}{8}$	173	Siberia	Sir Edmund G. Loder, Bart.

LION (*Felis leo*).*Ambassa* of the Abyssinians.*Asced* of the Arabs.*Imbubi* of the Swazis and Zulus.*Lendjandnēk* of the Gallas.*Libbah* of the Somalis.*Libbaka* of the Abyssinians (Dan-
akil).*Mkango* or *Nkalamo* in the Chilala
and Chibisa countries.*Simba* of the Swahilis.*Tau* of the Basutos.*Tauw* in Barotsiland.*Tauw* in Ngamiland.*Zaki* of the Hausas.

Any description of such a familiar animal as the lion (the only cat in which the male is furnished with a mane on the head and shoulders, and a tuft of long hair to the tip of the tail) would obviously be superfluous here. One of the great points of interest attaching to the species is its wide geographical distribution. Several local races are now recognised. Somali lions, for instance, are smaller and greyer than those from either the Cape or Algeria, although their manes are often very fine. Heights of 3 feet $4\frac{1}{2}$ and 3 feet 8 inches at the shoulder have been recorded in African specimens (the larger measurement by F. C. Selous), and 3 feet 6 inches in an Indian example (by Gen. W. Rice). General Paget estimated the weight of a Somali lion at about 550 lbs. Wild lions never develop the enormous manes frequently seen in menagerie examples.

A lion skull may be easily recognised when placed beside that of a tiger by observing that in the lion all the terminations of the sutures of the skull on the frontal are almost level; in a tiger the nasal bones extend much further back—besides this a lion skull will stand much flatter on a table than that of a tiger.

Distribution.—In modern times Africa from Algeria to the Cape, Mesopotamia on the west flanks of the Zagros range, Persia south of Shiraz, and India in the districts of Kathiawar, Sind, the Central Provinces, and Bundelcund. Now very rare in India, where it appears to be confined to Kathiawar.

General Measurements.

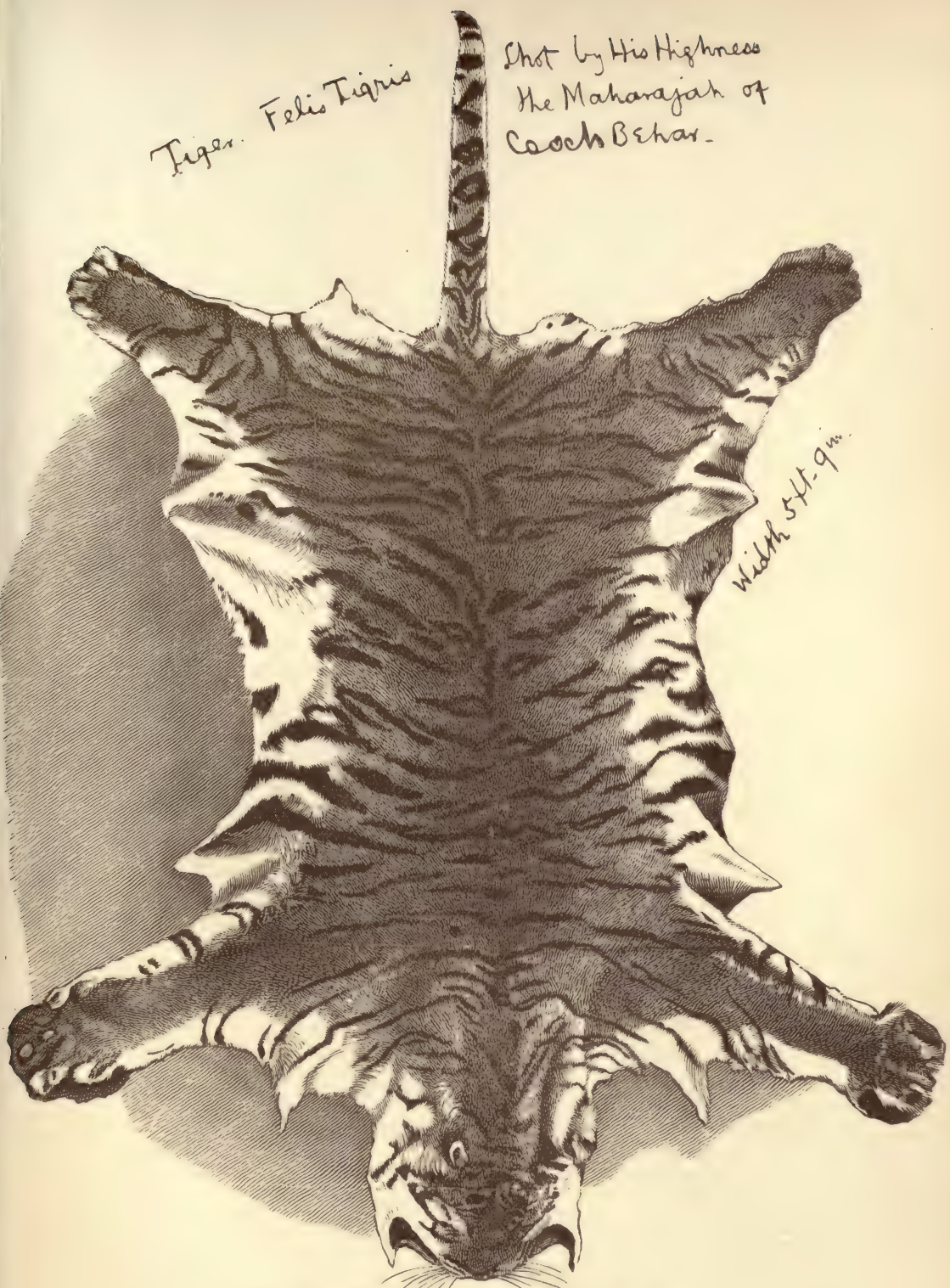
Total length before skinning.	Length from nose to root of tail.	Skin measure- ment from tip of nose to tip of tail.	Height at shoulder.	Girth of forearm.	Girth behind shoulder.	Weight.	Description.	Locality.	Owner.
ft. in.	ft. in.	ft. in.	ft. in.	in.	in.	lbs.			
-10 5 (A)	...	10 10½ (raw)	3 7	...	...	...	Full black mane	S. E. Africa	F. Vaughan Kirby.
10 4	7 2	11 4	...	20	...	...	...	?	Do.
-10 4	...	...	...	...	...	...	...	Somaliland	Count T. Zamoyiski.
-10 0	6 10	...	3 6	22 (upper arm)	57	434	Fine mane	Edmund's Menagerie	W. Yellowby.
-9 11 (C)	...	11 9 (raw)	3 8	...	...	410	Do.	Hartley Hills, Mashonaland	F. C. Selous.
-9 11	...	11 5½	3 7	16½	...	...	Do.	British East Africa	Norman B. Smith.
-9 10½ (D)	6 8	10 8 (dressed)	3 6	19½	51½	516	Do.	Do.	Capt. R. A. J. Montgomerie, R.N.
-9 10	...	...	...	...	...	...	Fair mane	Mashonaland	Sir John Willoughby, Bart.
-9 10 (H)	...	12 1½ (raw)	3 7	...	49½	...	Full black mane	Mushukulumbwe	Major A. St. H. Gibbons.
-9 10	7 0½	10 10	...	...	...	...	Yellow and black mane	Somaliland	The late Capt. J. Johnston Stewart.
-9 10 (K)	...	11 6	...	...	...	...	Do.	Do.	A. E. Leatham.
-9 8	6 6½	...	3 4½	15½	...	...	Full yellow mane	Zomba	R. G. Beswick.
-9 8-13	6 10	...	...	...	...	...	...	East Africa	Prince Henry of Liechten- stein.
-9 8	...	...	...	...	...	...	Yellow mane	Oliphant River	James J. Harrison.
-9 8	...	...	3 9	...	...	...	None	British East Africa	Lieut.-Col. J. H. Patterson.
-9 7	...	...	...	21½	45	...	Fine mane	P. E. Africa	Capt. M. McNeill.
-9 7 (L)	...	...	...	...	...	...	Do.	Kathiawar	Lord Harris.
-9 7	6 8½	...	...	...	...	...	...	East Africa	Prince Henry of Liechten- stein.
-9 6	10 5	...	...	19	49	...	...	B. C. Africa	S. Robins.
-9 5	6 6	...	...	...	...	...	Fine lioness	Kathiawar	Lieut.-Col. L. L. Fenton.

Skulls.

Basal length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
16 $\frac{1}{2}$ (A)	10	...	South-East Africa	F. Vaughan Kirby.
16 (end broken)	10 $\frac{1}{4}$	5 lbs.	East Africa :	E. Gedge.
-16	10 $\frac{1}{2}$	..	?	P. C. Keytel.
-15 $\frac{7}{8}$	9 $\frac{3}{4}$	6 lbs.	South Africa	J. Lamont.
15 $\frac{1}{2}$ (D)	10 $\frac{1}{2}$	5 lbs. 3 oz.	East Africa .	Capt. R. A. J. Montgomerie, R.N.
15 $\frac{1}{2}$	9 $\frac{1}{4}$	...	Pungwe .	Hon. T. Thynne.
-15 $\frac{1}{4}$	9 $\frac{1}{4}$	...	East Africa .	S. L. Hinde.
-15 $\frac{1}{4}$ (H)	9 $\frac{3}{4}$	...	Mushukulumbwe .	Major A. St. H. Gibbons.
15	10	...	Mashonaland .	Basil H. Woodd.
-15	10	...	Somaliland .	J. D. Inverarity.
15	10	...	Benguela .	G. W. Penrice.
15	9 $\frac{1}{2}$	...	Beira .	H. T. and A. H. Glynn.
15	9 $\frac{1}{2}$	...	?	H.R.H. le Duc d'Orléans.
15	10	...	Somaliland .	Major-Gen. Arthur Paget.
15 (C)	10	5 $\frac{1}{2}$ lbs.	South-East Africa	F. C. Selous.
-14 $\frac{1}{8}$	9 $\frac{1}{8}$	...	Portuguese East Africa	Capt. M. M'Neill.
14 $\frac{3}{4}$	10 $\frac{1}{2}$	...	East Africa .	Lord Delamere.
14 $\frac{3}{4}$	9	...	South-East Africa	H. M. von Archer.
14 $\frac{3}{4}$	9	...	Matabililand .	Capt. Sir K. Fraser, Bart.
14 $\frac{5}{8}$	...	...	Nigeria .	N. J. Dodd.
14 $\frac{1}{2}$	9 $\frac{3}{4}$	4 lbs.	South Africa	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Do.	Julius Jeppe.
-14 $\frac{1}{2}$	10	...	East Africa .	Norman B. Smith.
14 $\frac{5}{8}$	9 $\frac{1}{4}$	..	Matabililand .	Capt. Sir K. Fraser, Bart.
14 $\frac{1}{4}$ (G)	9 $\frac{3}{4}$	...	Somaliland .	Capt. G. Campbell.
-14 $\frac{1}{4}$	9 $\frac{5}{8}$	...	East Africa .	E. Wynstone Waters.
14 $\frac{1}{4}$	9 $\frac{3}{4}$	...	Somaliland .	Lieut.-Col. J. W. H. Flanagan.
-14 $\frac{1}{4}$ (K)	9 $\frac{1}{4}$	...	Do. .	A. E. Leatham.
♀ 14 $\frac{1}{8}$	8 $\frac{3}{4}$	...	South-East Africa	F. Vaughan Kirby.

Tiger. *Felis Tigris*

Shot by His Highness
The Maharajah of
Cooch Behar.



Width 5ft. 9in.

Length from nose to tip of Tail
before skinning 10ft 1½ in
dried skin 11 - 7 -

Indian Tiger Skin.

TIGER (*Felis tigris*).

A much less noisy animal than the lion, the great striped cat of Asia is also a more variable species, of which at least three local races may be recognised. First, we have the typical Bengal tiger, a large, long-limbed, lithe, and short-haired creature. A much smaller and rougher-haired race (*F. tigris virgata*) inhabits the Caspian provinces of Persia, and it is probably this form that extends into the Caucasus. Thirdly, we have the Manchurian tiger (*F. tigris longipilis*), characterised by its large size, heavy build, short limbs, and the great length and thickness of the fur, which is often much less fully striped than in Indian specimens.

Distribution.—From the Caucasus through Northern Persia, India, Assam, Burma, the Malay Peninsula, Sumatra, Java, and China, to Manchuria and Amurland. In India ranging from an elevation of some 7000 feet in the Himalaya to Cape Comorin, but unknown in Ceylon.



Manchurian Tiger Skin.

General Measurements.

Length before skinned.	Length of body.	Length dressed.	Girth of body.	Upper arm.	Girth. Fore-arm.	Head.	Height at shoulder.	Weight.	Locality.	Owner.
	ft. in.	ft. in.	inches.	ft.	ft. in.	ft.	ft. in.	lbs.		
-10 7(A)	7 0	12 1	56½	25	19½	36	3 4	491	Ramshai Háb, Duars, Bengal Assam Frontier	Col. Evans Gordon.
-10 6	...	11 8	...	...	...	...	...	...	Nepal	H.I.M. the Sultan of Turkey. (Shot by late Baron de Nolde.) A. Wilson.
-10 5½	...	...	52	...	...	...	...	...	Cooch-Bihar	His Majesty the King.
-10 5	6 11	12 10	51	26	18½	36	3 5	504	Bijnor, N.W.P.	A. M. Markham.
-10 4	7 1½	12 2½	52	...	21	39	3 6	...	Kanara, B.P.	W. Holland.
-10 4(D)	...	...	...	...	...	...	...	...	Duars	Capt. S. H. Pollen.
10 4(F)	...	...	...	...	...	...	...	...	Cooch-Bihar	II.H. the Maharajah of Cooch-Bihar.
-10 3	7 1½	12 1	52	29	19½	36½	3 4½	487	Patli Dun, N.W.P.	A. M. Markham.
-10 3(C)	7 1	12 2	49	...	19½	32½	3 4	...	Nepal	Lord Curzon.
-10 3	...	...	...	...	...	...	...	...	Cooch-Bihar	H.H. the Maharajah of Cooch-Bihar.
-10 2½	7 0	...	48½	26½	20	38½	3 3½	530	Nepal Terai	Sir E. L. Durand, Bart, C.B.
-10 2½	...	...	...	...	...	...	...	...	Central Provinces	II.H. the Maharajah of Bikanir.
-10 2	...	...	...	...	...	...	...	...	?	Otho Shaw.
-10 2	...	...	...	...	...	...	...	...	Cooch-Bihar	H.H. the Maharajah of Cooch-Bihar.
-10 1½	6 10	12 4	51½	28½	13½	38	3 4½	462	Do.	Do.
-10 1½	7 1½	11 7	54	29	21	40½	3 8¼	600	Terai	Miss Pole.
-10 1½	...	10 5	...	...	...	...	...	...	Cooch-Bihar	Capt. Hugh Fraser.
-10 1	...	11 10	...	...	...	...	...	...	Central Provinces	James J. Harrison.
-10 1	...	...	...	...	...	...	...	...	Terai	Lieut.-Gen. Sir G. Luck.

-10 0½	...	12 6	66	...	...	...	...	...	Rewa, C.P.	H. Bliss.
-10 0½	...	11 11½	...	...	...	...	...	...	?	E. R. Henry.
-10 6 11	...	...	52	26	21	36	3 4	540	Cooch-Behar	H.H. the Maharajah of Cooch-Behar,
-10 (E)	...	12 2	...	...	...	...	...	...	Terai Forests, Bengal	R. Nolan.
10 0	...	...	...	...	...	...	...	...	Central Provinces	J. Reed.
-10	...	...	...	...	...	...	...	...	Nilgiri Hills	Sir Edmund G. Loder, Bart.
-9 11	6 9	...	50½	28½	20½	37	3 3½	...	Cooch-Behar	Count E. Hoyos.
-9 11	6 6	11 2	54	...	...	...	...	...	Rewa, C.P.	Do.
-9 11	...	11 1½	...	...	...	...	...	...	Nepal	A. E. Leatham.
-9 10½	6 11	...	54	29	19½	39½	3 4	508	Cooch-Behar	A. Ezra.
-9 10½	6 10½	12 10	...	...	...	...	...	500	Do.	Capt. S. H. Pollen.
-9 10	...	...	...	...	...	...	3 9	...	Hyderabad	Capt. Hon. R. H. Marsham and Lieut. Sutton.
-9 10	6 6	...	...	...	...	...	...	...	Nepal Terai	Major B. B. Russell.
-9 10	...	11 8	...	...	...	...	...	...	Hyderabad, Deccan	A. M. Rotheram.
9 10	...	...	...	...	...	...	...	...	Central Provinces	Prince A. Taxis.
-9 9	...	...	...	...	...	...	...	...	Do.	James J. Harrison.
9 9	...	12 1½	...	...	...	...	...	...	Do.	Major F. C. Pearson.
-9 8½	...	...	48	24½	17	34½	3 3½	...	Hyderabad, Deccan	Capt. C. E. G. Norton and Capt. Sir K. Fraser, Bart.
9 8½	...	10 9	...	...	...	...	...	...	Central Provinces	Lieut.-Col. R. W. Mapleton.
-9 8 6 8	...	...	...	...	...	...	...	...	Cooch-Behar	Count E. Hoyos.
-9 8	...	...	45	...	...	...	...	...	Terai	Lieut.-Col. B. D. Möller.
-9 8	...	...	...	...	...	...	...	...	Philpitt	Major J. H. Gwynne.
-9 8 (n)	...	...	...	...	...	...	...	...	North Kanara	Lieut.-Col. L. L. Fenton.



Length before skinned.	Length of body.	Length dressed.	Girth of body.	Upper arm.	Girth. Fore- arm.	Head.	Height at shoulder.	Weight.	Locality.	Owner.
ft. in.	ft. in.	ft. in.	inches.	ft.	ft.	ft.	ft. in.	lbs.		
-9 8	...	...	...	...	...	...	...	...	?	Brig.-Gen. F. H. Whitby.
-9 6	6 3	...	...	...	...	...	...	...	Rewa, C.P..	Count E. Hoyos.
-9 6	...	...	...	...	...	...	...	...	Hyderabad, Deccan	Major G. A. L. Carew and Lieut.- Col. G. L. Holdsworth.
-9 6	...	10 9	...	...	...	...	...	...	Deccan	Major Frank Lee.
-9 9 5½	6 2½	...	42	20	15	35	...	...	Cooch-Bihar	Lord Villiers.
9 5½ (G)	...	...	...	...	17	43	...	...	Deccan	W. J. R. Wingfield.
-9 5	6 4	10 4½	49	26	18	32½	3 2½	420	Cooch-Bihar	Count Scheibler.

Skulls.

Basal length from back to front.	Breadth across the zygomatic arches.	Weight cleaned.		Locality.	Owner.
		lbs.	oz.		
-15 $\frac{3}{4}$	...	...		Cooch-Behar . . .	H. H. the Maharajah of Cooch-Behar.
-15 $\frac{3}{4}$	11 $\frac{1}{8}$	...		?	Col. A. Pollock.
-15 $\frac{1}{4}$	10 $\frac{7}{8}$	...		N.E. Bengal . . .	A. M. Murdoch.
15 $\frac{5}{8}$	10 $\frac{1}{4}$	...		Cooch-Behar . . .	Lord Stavordale.
-15 (A)	10 $\frac{3}{8}$	...		Bengal . . .	Col. Evans Gordon.
15	10 $\frac{1}{4}$	...		?	Rowland Ward.
14 $\frac{7}{8}$ (F)	10	...		Duars . . .	Major S. H. Pollen.
14 $\frac{1}{2}$	9 $\frac{3}{4}$	4	10	Do. . . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$ (G)	10 $\frac{3}{8}$	...		Deccan . . .	W. J. R. Wingfield.
-14 $\frac{1}{2}$	10	...		Terai . . .	Bombay Natural History Society.
14 $\frac{1}{2}$	10 $\frac{1}{8}$	...		Central Provinces .	Capt. W. H. Hunter.
-14 $\frac{1}{2}$ (C)	10 $\frac{1}{4}$	...		Bijnor District, N.W.P.	A. M. Markham.
14 $\frac{1}{4}$	10 $\frac{3}{8}$	...		Central Provinces .	Capt. E. A. D'Arcy Thomas.
14 $\frac{1}{4}$ (D)	9 $\frac{1}{2}$	...		Kanara Jungles .	W. Holland.
14 $\frac{1}{4}$ (E)	9 $\frac{1}{2}$	...		Terai . . .	R. Nolan.
-14	10	...		?	J. D. Inverarity.
-14	10 $\frac{9}{16}$	...		Bijnor District .	A. M. Markham.
13 $\frac{7}{8}$	9 $\frac{3}{4}$	...		?	Capt. S. H. Pollen.
13 $\frac{3}{4}$	9 $\frac{1}{4}$	...		Indhaorée, Nimar .	Lieut.-Col. H. Wade-Dalton.
13 $\frac{3}{4}$	9 $\frac{3}{4}$	...		?	Philip Wood.
13 $\frac{3}{4}$	9 $\frac{1}{2}$	...		Madras . . .	Col. J. Hinde.
-13 $\frac{3}{4}$ (B)	9 $\frac{1}{4}$	...		North Kanara .	Lieut.-Col. L. L. Fenton.
13.70	9	...		Duars . . .	Mrs. Lawrie-Johnstone.

Skins.

Length of skin dressed.		Locality.	Owner.
ft.	in.		
13	6	Mongolia	A. Bignold.
11	3 $\frac{1}{2}$	Do. . . .	Col. W. H. Walker.
12	0	Do. . . .	H. R. H. le Duc d'Orléans.

A, B, C, D, E, F, G. For skins see p. 468 and 469.

LEOPARD (*Felis pardus*).

The leopard has an even larger range than the lion, and is probably the most widely distributed of all the cats. Sportsmen in India recognise a larger "panther" and a smaller "leopard," although naturalists fail to distinguish them as separate forms. The typical representative of the species is the larger Indian leopard. The African leopard, which has the spots on the body of smaller size, and many of them without light centres, like those on the head, is known as *F. pardus leopardus*, the pale East African leopard being the type of this race. West African leopards are darker. In Persia, Baluchistan, and the mountains of Sind is found a race of the leopard (*F. pardus panthera*) characterised by its pale colour, long fur, and thick tail; it is to some extent intermediate between the typical race and the ounce. Lastly, there is the Manchurian leopard (*F. pardus fontanieri*), a very distinct animal, of heavy build, with a pale ground-colour to the fur, which is very long and thick, and the spots in the form of large complete rings, without any smaller spots in the centre. In the moist forest districts of Asia black leopards are by no means uncommon; and there is a tendency to darkening of a different type in some South-African specimens. Height at shoulder from about 2 feet (India) to 2 feet 4 inches (Africa). A large leopard killed by Lieut.-Col. L. L. Fenton in the Gir forest, Kathiawar, measured 7 feet $8\frac{1}{2}$ inches in length; the length of the tail being $35\frac{1}{2}$ inches, the girth of the neck $21\frac{1}{2}$ inches, of the forearm $11\frac{1}{2}$ inches, and of the body behind the shoulder $35\frac{1}{2}$ inches; weight, 160 lbs.

Distribution.—Africa, the Caucasus, Asia Minor, and Asia generally, with the exception of Northern Siberia, the Tibetan plateau, and perhaps Japan.

General Measurements—Indian Specimens.

Length before skinned.		Total length dressed.	Weight.	Locality.		Owner.
ft.	in.	ft.	in.	lbs.		
—8	4	...	...	Cooch-Behar	. .	H. H. The Maharajah of Cooch-Behar.
—8	$2\frac{1}{2}$	...	...	Do.	. .	Do.
—8	$1\frac{1}{2}$	...	...	Do.	. .	Do.
—8	0	...	154	Do.	. .	Do.
—8	0	8 $8\frac{1}{2}$	...	India	. .	Count J. Potocki.

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	in.	ft.	in.			
-7	10	8	4 $\frac{3}{4}$	...	Ganges Kadir . . .	See below. ¹
-7	9 $\frac{1}{2}$	8	6	...	Central Provinces . .	James J. Harrison.
-7	9	...	...	...	Nepal . . .	C. H. II. B. Caldwell.
-7	9	...	...	...	Oude	Mrs. Innes.
-7	8	...	...	...	Hyderabad, Deccan .	Capt. C. E. G. Norton and Capt. Sir K. Fraser, Bart.
-7	8	...	...	...	Ganges Kadir . . .	Muttra Tent Club. ²
-7	7	8	7 $\frac{1}{2}$	...	Siwaliks	E. H. E. Green.
-...		7	10	...	?	Col. W. Gordon Cumming.
-7	6	...	...	...	Chaubattia	Major R. B. Fell.
-7	4 $\frac{1}{2}$	...	...	...	Gujerat	Capt. H. J. Morphy.
-97	4	8	1	145	Bijnor District . . .	Major E. McK. Williams.
-7	4	...	...	...	Kathiawar	Lieut.-Col. L. L. Fenton.
7	3 $\frac{1}{2}$	8	2	...	Central Provinces . .	Lieut.-Col. R. W. Mapleton.
-7	3 $\frac{1}{4}$	...	...	...	Do.	H. B. Learoyd.
-7	3	...	...	...	?	Brig.-Gen. F. H. Whitby.
-7	1	7	10 $\frac{7}{8}$	...	Rewa, C.P.	Count E. Hoyos.
-7	1	7	11 $\frac{1}{2}$	...	Kotah	H.H. the Maharajah of Bikanir.
-7	1	...	...	...	Hyderabad, Deccan .	Major G. A. L. Carew and Lieut.-Col. G. L. Holdsworth.
-7	0 $\frac{1}{4}$	8	3 $\frac{1}{2}$	...	?	H.H. the Maharajah of Bikanir.
7	0	...	...	...	?	Lieut.-Col. A. E. Ward.

The following are the dimensions of two specimens shot in Ceylon by Count Scheibler :—

	Male		Female	
	ft.	in.	ft.	in.
Length from tip of nose to end of tail	7	0	6	4
„ „ „ root of tail	4	3 $\frac{1}{2}$	3	7
Height at shoulder	2	2 $\frac{1}{2}$	1	9
Girth	2	7	2	1
Circumference of upper arm	0	13	0	10
„ „ forearm	0	10 $\frac{3}{4}$	0	8 $\frac{1}{2}$

¹ Speared by Capt. H. Hoare (5th D.G.), Major J. G. Rotton (R.A.), and Capt. W. Gillman (R.H.A.).

² Major A. C. King and some officers of the 5th Lancers, when out with the Muttra Tent Club.

General Measurements—African Specimens.

Length before skinned.		Weight. lbs.	Locality.	Owner.
ft.	in.			
-7	3½	...	?	Count J. Potocki.
-7	3	...	Wadelai, E. C. Africa	Col. W. P. Pulteney.
-7	2	...	Somaliland	Count Scheibler.
-7	2	...	South-East Africa	F. Vaughan Kirby.
-7	1½	...	?	C. V. A. Peel.
-7	0	..	Somaliland	The late Capt. J. Johnston-Stewart.
-6	11	...	E. C. Africa	James J. Harrison.
-6	10	...	Somaliland	Count Scheibler.
-6	10	140	Nyasaland	A. White.
-6	3	...	Somaliland	Norman B. Smith.
1-6	2	...	Jebba, Nigeria	The late Capt. H. W. Baker.
-6	0	...	Somaliland	Count E. Hoyos.
-9-6	0	...	Do.	C. V. A. Peel.
2-5	7	...	Nigeria	Col. T. D. Pilcher.

¹ Height at shoulder, 2 ft. 1½ in.² Height at shoulder, 22 in.; girth, 21½ in.

The following specimens were shot and measured by Mr. F. Vaughan Kirby; the first being from the Nguanetsi River, and the second from the Matamiri Bush, S.E.A. :—

Length, tip to tip in a straight line.		Length over all—'sportsman's' measurement.		Shoulder height.	Girth of neck.	Girth behind shoulder.	Girth of forearm.	Length of skull.	Zygomatic width.	Cleaned weight.	
ft.	in.	ft.	in.	ft.	in.	in.	in.	in.	in.	lbs.	oz.
6	11	7	2	2	7	22	35½	12½	9½	6½	1 8
6	9	7	2	2	7	20	33½	11½	9	5½	...

Skulls.

Total length.	Width.	Weight.	Locality.	Owner.
in.	in.	lbs. oz.		
-10½	6½	...	Bijnor District, N.W.P.	A. M. Markham.
-10-3/16	6½	...	Gir Forest, Kathiawar	Lieut.-Col. L. L. Fenton.
-9½	...	1 5 clean	Nyasaland	Dr. Percy Rendall.
-9¾	6	...	?	Julius Jeppe.
-9½	...	...	?	Do.
-9	5½	..	S. E. Africa	F. Vaughan Kirby.
-6¾	5	...	India	W. T. Blanford.

SNOW-LEOPARD or OUNCE (*Felis uncia*).

Although the Persian leopard is in some degree intermediate in respect to colour and the length of the coat, the ounce differs from the leopard by the ground-colour of the long and dense fur being dirty white, with the spots on the back, sides, and tail, in the form of large, irregular, ill-defined, and interrupted rings, and by the great thickness of the tail, which scarcely tapers, and is about three-quarters the length of the head and body. Height at shoulder about 2 feet 4 inches. Skull about 6 inches long.

Distribution.—The high ranges of Central Asia, including Gilgit, Hunza, Turkestan, Trans-Baikalia, Ladak, Tibet, Amurland and Western China, extending in the north-west to the Altai, and in the west, it is said, to Persia. In Prince Demidoff's *Hunting Trips in the Caucasus* a snow-leopard is figured as coming from that range, but the animal found there is *F. pardus panthera*. The snow-leopard generally dwells at elevations of over 8000 feet, but descends in Gilgit during winter to 6000 feet.

Length dressed.		Weight.	Locality.	Owner.
ft.	in.			
8	8	...	Central Asia . . .	A. Ezra.
8	7	...	Tibet . . .	Rowland Ward.
8	6	...	?	B. C. Graham.
8	6	Skull, $7\frac{3}{4} + 5\frac{1}{4}$	Baltistan . . .	R. Rankin.
8	$2\frac{1}{2}$	...	Do. . . .	E. Langworthy.
-7	10	...	Near Leh . . .	Lieut.-Col. S. Frewen.
-7	$5\frac{3}{4}$	...	Pamir . . .	Viscount Edmond de Poncins.
7	5	...	?	Major F. J. Harden.
-7	4	(24 inches at shoulder)		The late R. A. Sterndale.
-7	3	...	?	Lieut.-Col. A. E. Ward.



Skin of Snow-Leopard.

CLOUDED LEOPARD (*Felis nebulosa*).

The *arimau dahan*, as this species is called by the Malays, is the size of a small leopard, with a very long and thickly furred tail, and large upper tusks. The ground-colour of the fur varies from grayish brown to fulvous, upon which are large dark blotches, frequently bordered in part with black. In old specimens the blotches often disappear, leaving only the black borders.

Distribution.—From the Sikhim and Bhutan Himalaya, through Assam, Burma, Siam, and the Malay Peninsula, to Sumatra, Java, and Borneo. Represented by a smaller variety (*F. nebulosa brachyurus*) in Formosa.

Skins.

Length dressed.		Weight.	Locality.		Owner.
ft.	in.	lbs.			
6	6	...	Assam	.	The late B. H. Hodgson.
6	4	44½		?	The late R. A. Sterndale.
5	9	...		?	Capt. B. R. M. Glossop.
5	7½	...	Assam	.	The late B. H. Hodgson.
5	7½	...	Do.	.	P. Russel.

Skulls.

Basal length from back to front.	Breadth.	Locality.	Owner.
6.2 in.	4.75	Assam	The late B. H. Hodgson.

JAGUAR (*Felis onca*).

This cat may be regarded as the American representative of the leopard, which it fully equals, even if it does not exceed, in size. The colour and markings are generally similar to those of the latter, but the dark rings are larger and arranged more definitely in groups, each ring usually enclosing one or more dark central spots, and the enclosed light area being of the same tint as the general ground-colour of the fur, which is typically of a rich tan. Usually seven or eight more or less distinct longitudinal rows of rosettes may be noticed on each side of the body.

Distribution.—America, from Louisiana, Texas, and Northern Mexico to about the Rio Negro, on the northern confines of Patagonia in lat. 40° S.

Length before skinning.		Length dressed.	Locality.		Owner.
ft.	in.	ft.	in.		
9	3	9	3	Brazil	Count Henry Coudenhove.
8	3¾	...		Do.	Do.
6	11	7	9	Paraguay	James J. Harrison.
..		7	7	British Guiana	Sir A. W. L. Hemming.

PUMA (*Felis concolor*).

With the exception of the much smaller and longer-tailed jaguarondi, the puma (pronounced pooma) is the only uniformly coloured cat found in America, where its range extends from British Columbia and Maine in the north to the Strait of Magellan in the south. The size is inferior to that of the jaguar, the height at the shoulder being about 2 feet, and the weight 150 lbs. The general colour of the fur is tawny, tending, like that of the Virginian deer, to reddish in summer, and to grayish in winter, with the middle of the back darker, and a whitish patch on the back of the otherwise black ears. But with such an enormous geographical range, it is inevitable there should be much local variation; and a number of races are now recognised, most of which are distinguished by size or the redder or grayer tint of the fur. A Patagonian race has pale ears.

Length in the field.		Weight.	Locality.	Owner.
ft.	in.	lbs.		
-8	6	about 150	...	A. Pendarves Vivian.
-7	6½	...	Brazil	Count Henry Coudenhove.
-7	5	...	Gallegos River, Patagonia . .	W. Moncreiffe.
-7	3	...	Fraser River, British Columbia .	J. Fannin.
-7	0	...	Wyoming	J. L. Scarlett.

LYNXES (*Felis lynx*, etc.).

The lynxes form a well-marked group connected with the more typical members of the cat tribe by the jungle-cat (*F. chaus*), and distinguished by the tuft of long hairs at the summit of the ears, and the absence of the first upper cheek-tooth. From the others the caracal (*F. caracal*), of Africa and India, is broadly distinguished by its long tail and uniform rufous colour. The short-tailed lynxes are, however, a group in which it is very difficult to determine whether the variations indicate distinct species or local races. In the typical European lynx (*F. lynx*) the tail is very short, the throat has a ruff of long hair, and the coat is spotted with dark brown; the Tibet lynx (*F. lynx isabellina*) is a pale variety, and the Canadian lynx (*F. lynx canadensis*), which ranges as far south as California, is another race. The red lynx (*F. rufa*), which is also widely extended in America, and has numerous local races, is a second species. From differences in the form of the skull, the Spanish lynx (*F. pardina*), which is a fully spotted animal, is also classed as a distinct species. It ranges over a large portion of Southern Europe, including Turkey, Greece, Sicily, Sardinia, and

Spain and Portugal. The ordinary lynx stands from 16 to 18 inches at the shoulder.

(a.) **EUROPEAN LYNX.**

Length on the field, nose to root of tail.	Height at shoulder.	Locality.	Owner.
-49½ in.	...	Andalucia . . .	Abel Chapman.
-42·9 „	...	Eastern Carpathians .	Prince Henry of Liechtenstein.
42 „	23	Do. .	Count Henry Coudenhove.

(b.) **TIBET LYNX.**

Height at shoulder, 16 or 18 inches.

(c.) **CANADIAN and RED LYNX.**

Length on the field, nose to root of tail.	Height at shoulder.	Weight.	Locality.	Owner.
¹ -38 in.	25	60 lbs. (about)	Wyoming . . .	Major G. Dalrymple White.
33 „	17	...	Wyoming . . .	Capt. M. McNeill.
² -32 „	22	40 lbs. (about)	Nova Scotia . . .	Major G. Dalrymple White.
¹ Canadian Lynx.			² Bay Lynx.	

(d.) **CARACAL.**

Flat skin.	Locality.	Owner.
46½ in.	Nr. Grahamstown, S. Africa	Dr. H. Smith.

HUNTING-LEOPARD or CHITA. (*Cynælurus jubatus*).

Although this animal is commonly called chita (cheetah) by Anglo-Indian sportsmen, that name is at least as often applied in India to the leopard. From all the true cats and lynxes the hunting-leopard differs by the claws being capable of only partial withdrawal into their sheaths, so that their tips are always exposed. The body also is more slender, and the limbs are proportionately longer. The black spots on the skin are small and without light centres, like those on the head of the leopard. Length 7 feet or less, height at shoulder 30 to 39 inches. A specimen speared by Lieut.-Col. L. L. Fenton in Kathiawar measured 6 feet ¼ inch in length, the tail being 2 feet 2¼ inches.

The animal is the "Ihlose" of the Zulus and Swazis, and is distributed sparsely throughout S.E. Africa. Hunting-leopards usually hunt in couples, and fairly stalk their game, securing it with a swift rush at the last. Mr. F. Vaughan Kirby says: "I have seen a party of six hunting together and another of eight. Though I have often tried, I have never yet succeeded in running into one on horseback; they are incredibly swift of foot. They invariably kill their prey by strangulation."

Distribution.—Africa and South-Western Asia, extending from Persia to Western Turkestan and the countries east of the Caspian, and eastwards into India; unknown in the latter country on the Malabar coast and to the north of the Ganges, as it also is in Ceylon.

Length.		Length of tail.		Height at shoulder.	Locality.	Owner.
ft.	in.	ft.	in.			
-7	0	...	...	...	India	The late R. A. Sterndale.
-6	0 $\frac{1}{4}$	2	2 $\frac{1}{2}$	...	Near Rajkot, Kathiawar	Lieut.-Col. L. L. Fenton
-6	4 $\frac{3}{4}$	2	3 $\frac{1}{2}$	28 $\frac{1}{2}$	N.E. Transvaal . 90 lbs.	Dr. Percy Rendall.
-6	4	...	...	...	Somaliland	The late Capt. J. Johnston-Stewart.

The following are the dimensions of a specimen shot in the Eastern Transvaal by Mr. F. Vaughan Kirby.

Total length in straight line.	Do. over all.	Tail.	Vertical height.	Girth of forearm.	Do. shoulders.
6 ft. 8 in.	7 ft. 7 in.	2 ft. 9 in.	2 ft. 11 $\frac{1}{2}$ in.	8 $\frac{1}{4}$ in.	31 in.

SPOTTED HYÆNA (*Hyæna crocuta*).

Somali <i>Uaraba</i> .	<i>Setongwani</i> in Barotsiland.
Danakil <i>Yangula</i> .	<i>Piri</i> in Ngamiland.
Abyssinian <i>Jib</i> .	<i>Chimbwi</i> in the Chilala and Chibisa countries.

The hyænas form a small family of Carnivora allied in some respects to the cats, but distinguished by the form of the skull, the more numerous teeth (which are, however, to a considerable extent cat-like), and the four-toed feet, with non-retractile claws. The spotted hyæna is the largest of the three species, and takes its name from the large dark blotches on its tawny coat. Its carnassial teeth are more cat-like than those of the other species.

Distribution.—Africa, south of the Sahara.

Nose to root of tail in a straight line, 4 feet 9 $\frac{1}{2}$ inches. Length of tail, 1 foot 1 inch.

Extreme length over all, 6 feet 3 inches.

Vertical standing height, 3 feet.

Girth behind shoulders, 39 $\frac{1}{2}$ inches.

Skulls.

Length.	Width.	Weight.	Locality.	Owner.
in.	in.	lbs. oz.		
-12 $\frac{1}{4}$	7 $\frac{1}{4}$	2 8	South-East Africa	F. Vaughan Kirby.
-12 $\frac{1}{4}$	7 $\frac{3}{8}$	2 12	Zomba, B.C.A.	D. MacAlpine.
-11	7 $\frac{1}{2}$	...	Somaliland	Viscount Edmond de Poncins.
-11	6 $\frac{1}{2}$	...	South-East Africa	F. Vaughan Kirby.
-10 $\frac{5}{8}$	6 $\frac{1}{8}$	2 3	East Africa	Capt. R. A. J. Montgomerie, R.N.



Brown Bear.

BEARS (*Ursidæ*).

Bears are so unlike other animals and so like one another that no one has the slightest difficulty in recognising a member of the group when he sees it. They constitute a family of Carnivora—the *Ursidæ*—and are spread over the greater part of the globe, with the exception of Africa to the south of the Sahara desert, and the Australasian islands. As some of their leading characteristics may be mentioned their large bodily size, clumsy build, shaggy fur, uniform coloration, the very short tail, and the application of the whole sole of the foot to the ground in walking. The skull and teeth are likewise very peculiar and

distinctive, although these need not be taken into consideration in this place.

In consequence of the marked similarity to one another of most members of the group, it is a matter of extreme difficulty to come to a definite conclusion as to the number of species of bears—not that this is a matter of very much importance one way or another. The typical member of the group is the familiar brown bear (*Ursus arctus*) of Europe, whose colour is generally a darker or lighter shade of brown, but occasionally tends to grayish. The Syrian bear (*U. arctus syriacus*), in which this grayish tinge predominates, may be regarded as a local variety, and the same is the case with the snow-bear of Kashmir (*U. arctus isabellinus*), in which the colour is generally a light creamy brown. European specimens probably seldom exceed eight feet, but the huge Kamchatkan bear (*U. arctus collaris*) grows to nine feet. Even more gigantic is the Kadiak bear (*U. arctus middendorfi*) of Kadiak Island, Alaska; while the Yezo bear (*U. arctus yesoensis*) of Japan is another large form, with much the external appearance of a grizzly. The Alaskan bear (*U. arctus dalli*), from the mainland of Alaska, is also a huge animal, slightly smaller than the one from Kadiak Island, with more resemblance to an ordinary brown bear than to a grizzly. The typical grizzly of the Rocky Mountains is a smaller animal, with longer and straighter claws, but scarcely entitled to rank as more than another local race (*U. arctus horribilis*), next to which comes the Barren Ground bear (*U. arctus richardsoni*). Finally, the last animal which can be included in this group of the genus is the African bear (*U. arctus crowtheri*), of North-Western Africa, still imperfectly known. The extinct cave-bear (*U. spelæus*) is a large species allied to the brown bear.

The little blue bear (*U. pruinosus*) of Tibet, with more or less of white on the head and shoulders, seems to form a distinct species. The same is the case with the American black bear (*U. americanus*), which is generally black, and exhibits distinctive features in the skull and teeth. Not improbably the Himalayan black bear (*U. torquatus*) is a relative of the last-named species; it may be recognised by the conspicuous white gorget on the breast. In Japan it is represented by the Japanese black bear (*U. japonicus*). The smallest species of the genus are the very distinct Malayan bear (*U. malayanus*), and the allied spectacled bear (*U. ornatus*) of the Peruvian and Bolivian Andes, the latter distinguished by the light-coloured rings generally surrounding the eyes, from which it derives its name.

The most distinct of all the species included in the genus *Ursus* is

the Polar bear (*U. maritimus*), so distinct, indeed, that many naturalists think it ought to form a group by itself. Externally its chief characteristics are its white coat, and the presence of a certain amount of hair on the soles of the feet; both these peculiarities being evidently adaptations to the Arctic habitat of the animal. It has been recently stated that very old Polar bears exhibit a tendency to the development of a brownish tinge in the fur. Last of all comes the Indian sloth-bear (*Melursus ursinus*), which is so different from the other kinds as to form a genus by itself. It is too well known an animal to need description, some of its characteristics being the long and bare snout, the ragged, wiry hair, extensile tongue, small cheek-teeth, and the diminished number of front teeth.

(a.) Skulls.

Basal length from back to front.	Width across the zygo- matic arches.	Weight cleaned.	Race, or Species.	Locality.	Owner.
in.	in.	lbs. oz.			
18 $\frac{3}{4}$	11 $\frac{3}{8}$	12 0	Cave bear	Europe . .	Sir Edmund G. Loder, Bart.
18	11	10 0	Kamchat- kan	Siberia . .	Hon. Walter Rothschild.
-17 $\frac{1}{4}$	10 $\frac{3}{8}$	...	...	Alaska . .	Rev. Dr. R. J. Nevin.
-16 $\frac{1}{2}$	...	...	...	Do. . .	H. W. Seton-Karr.
16	9 $\frac{7}{8}$	5 8	Polar	Nova Zembla.	J. Lamont.
15 $\frac{7}{8}$	10 $\frac{1}{2}$	5 13	Do.	Polar Seas .	Sir Edmund G. Loder, Bart.
15 $\frac{1}{2}$ (D)	9 $\frac{1}{2}$	5 10	Grizzly	Brit. Columbia	Sir Peter Walker, Bart.
15 $\frac{3}{8}$	9 $\frac{1}{4}$	4 10	Kamchat- kan	Kamchatka .	Comdr. R. E. R. Benson, R.N.
14 $\frac{11}{16}$	9	...	Brown	Kamchatka .	St. George Littledale.
14 $\frac{1}{2}$	8 $\frac{1}{4}$	4 8	Grizzly	Brit. Columbia	S. B. Bennett.
14 $\frac{3}{8}$ (C)	8 $\frac{1}{4}$	5 0	Do.	New Mexico .	Montague Stevens.
13 $\frac{5}{8}$	8 $\frac{3}{4}$	...	Red	Kashmir . .	B. H. Shaw-Stewart.
-12 $\frac{7}{8}$	7	...	Sloth	Mysore . .	Capt. M. M'Neill.
12 $\frac{1}{2}$	7 $\frac{3}{8}$	...	Do.	Cent. Prov. .	C. F. Egerton.
12 $\frac{1}{2}$	7	...	Grizzly	Wyoming . .	J. L. Scarlett.
12 $\frac{1}{2}$ (B)	6 $\frac{3}{4}$	...	Sloth	Cent. Prov. .	Surgeon-Major M. O'C. Drury.
12 $\frac{3}{8}$	7 $\frac{5}{8}$	...	Snow	Kashmir . .	A. Ezra.
12 $\frac{3}{8}$	7 $\frac{1}{2}$	...	Red	Do. . .	Major C. B. Wood.
12 $\frac{1}{8}$	7 $\frac{5}{8}$	...	Grizzly	Wyoming . .	J. L. Scarlett.
12	7 $\frac{1}{8}$	...	Sloth	Cent. Prov. .	C. F. Egerton.
11 $\frac{1}{2}$ (A)	6 $\frac{3}{4}$	...	Brown	W. Caucasus .	St. George Littledale.
-8.5	8.3	...	Malayan	Borneo . .	W. T. Blanford.

(b.) Skins.

Length from nose to tip of tail.		Height at shoulder.		Girth.	Weight.	Race, or Species.	Locality.	Owner.
ft.	in.	ft.	in.	ft. in.	lbs.			
-13	6 ¹	...	...	...	1656	Kadiak	Kadiak Island, Alaska	J. C. Tolman.
-11	6½ ¹	10 2 ² (from one front paw to other)	...	...	1536	?	Nevada, 1881	W. F. Sheard.
-11	6 ¹	...	...	...	...	?	Alaska .	American Museum of Natural History.
9	10 ¹	...	...	...	...	Alaskan	Do. .	Rowland Ward.
9	8 ¹	...	...	...	...	Do.	Do. .	South-African Museum.
9	5 ¹	...	...	...	...	Do.	Do. .	Dublin Museum.
9	5	4 6	...	...	...	Polar .	Baffin Bay .	W. Livingstone Lear- month.
9	5 ¹	...	...	...	...	Alaskan	Alaska .	Hon. Walter Rothschild.
8	10 ¹	4 0 (mounted)	...	...	...	Do.	Do. .	British Museum.
-8	7	...	...	...	1600	Polar .	Arctic Seas .	Captain Lyon.
-8	7	...	...	...	...	Grizzly .	Wyoming .	T. P. Kempson.
-8	7	...	...	...	...	Polar .	Spitzbergen .	A. Barclay Walker.
-8	6	...	...	...	...	Grizzly .	Wyoming .	T. P. Kempson.
-8	6	...	...	...	...	Polar .	Franz Josef Land	Dr. S. H. T. Armitage.
-8	5	...	...	...	...	Black .	Kashmir .	Capt. W. Westropp White.
-8	4	...	...	...	...	Do. .	?	Surg.-Major W. White.
-8	3	...	...	...	...	Kam- chatkan	Kamchatka .	Dr. F. H. H. Guillemard.
-8	3	...	...	...	...	?	Alaska .	C. G. Cowan.
-8	0½	...	...	...	...	Grizzly .	Wyoming .	T. W. H. Clarke.
-8	0	...	...	...	...	Polar .	Spitzbergen .	A. Barclay Walker.
-8	0 (D)	3 11	...	...	...	Grizzly .	Brit. Columbia	Sir Peter Walker, Bart.
-8	0 (C)	...	...	...	735	Do. .	New Mexico	Montague Stevens.
-7	11	...	...	...	800 (about)	Brown .	Norway .	Capt. Gerard Ferrand.
-7	9	...	...	...	...	Snow .	Kashmir .	Major C. F. Blane.
-7	4	...	...	...	...	Red .	Do. .	B. H. Shaw Stewart.
-7	5½	...	...	...	...	Black .	Wyoming .	T. W. H. Clarke.

¹ Skin measurement.² Measurement of head in the flesh from tip of nose to base of skull, 29 inches; between ears, 16 inches.

Length from nose to tip of tail.		Height at shoulder.		Girth.		Weight.	Species.	Locality.	Owner.
ft.	in.	ft.	in.	ft.	in.				
-7	0 $\frac{3}{4}$	...	...	...	...	680 (about)	Brown .	Lithuania .	Prince Radziwill.
-7	0	3	2	...	...	...	Do. .	India .	Lieut.-Col. A. E. Ward.
-6	11	...	...	...	...	...	Black .	Wyoming .	James J. Harrison.
-6	10	3	0	4	4 $\frac{1}{2}$ forearm	423	Sloth .	Cooch Behar	H.H. the Maharajah of Cooch Behar.
-6	9 $\frac{1}{2}$	...	...	25	...	...	Snow .	Kashmir .	S. V. Occleston.
-6	8 (B)	...	...	...	...	...	Do. .	Do. .	A. Ezra.
-6	6	...	...	...	...	...	Grizzly .	Wyoming .	Count E. Hoyos.
-6	5	...	...	...	...	...	Do. .	Do. .	J. L. Scarlett.
-6	4 $\frac{1}{2}$	...	...	...	...	...	Snow .	?	Major H. M. Biddulph.
-6	3	...	...	...	...	...	Grizzly .	Wyoming .	J. L. Scarlett.
-6	2 $\frac{1}{2}$	...	...	...	...	...	Black .	Brit. Columbia	Count E. Hoyos.
-6	1 $\frac{1}{2}$	...	...	...	...	...	Sloth .	Mandla, Cent. Provinces	Capt. B. H. Boucher.
-6	1	...	...	...	...	...	Cinnamon	Wyoming .	James J. Harrison.
-6	0 $\frac{1}{2}$	...	...	...	...	...	Sloth .	Hyderabad .	Count E. Hoyos.
-6	0	4	6	...	...	...	Black .	?	Col. H. G. Mainwaring.
-6	0	3	0	...	...	280	Do. .	?	The late G. P. Sanderson.
-5	10 $\frac{1}{2}$	3	0	3	4	...	Red .	?	Major H. M. Biddulph.
-5	5	2	5 $\frac{3}{4}$	2	10 $\frac{3}{4}$	250 about	Black .	Brit. Columbia	Count Scheibler.
-5	5	2	11 $\frac{1}{2}$	4	4	600 about	Grizzly .	Do.	Do.
-5	2 (A)	...	...	...	...	...	Brown .	W. Caucasus	St. George Littledale.
-4	7	...	...	...	...	...	?	Asia Minor .	H. O. Whittall.

N.B.—Some of the specimens entered as "Grizzly" may be the Barren Ground bear.

WALRUS (*Odobænus rosmarus* and *O. obesus*).

The unwieldy seal-like animals commonly known by a corruption of the Scandinavian name valross (whale-horse) form in some respects a connecting link between the true seals and the eared seals, although differing from both in the huge upper tusks which depend from the muzzle of males and females alike, as also by the thick yellow bristles covering the muzzle itself. Like the true seals, walruses have lost all traces of external ears, but, unlike the former, and like the eared seals, their huge hind-flippers are turned forwards beneath the body when on land. The molar teeth, which are adapted for crushing the shells on which these monsters feed, have simple flattened crowns, quite unlike those of seals. Although young and adolescent walruses have fairly thick coats of yellowish fur, in old individuals the tough hide becomes almost bare, except for the aforesaid bristles. Walruses are estimated to attain a weight of from 2250 to 3000 lbs.

Walruses are exclusively confined to the Arctic seas, where they spend much of their time on the ice. There are two kinds, now generally regarded as separate species; the one confined to the North Atlantic, and the other to the North Pacific. The distribution of these animals is by no means of circumpolar extent, the Atlantic walrus (*O. rosmarus*) apparently not ranging on the Asiatic coast east of the mouth of the river Lena; while in America they do not appear to inhabit the vast extent of coast lying between the western shore of Hudson Bay and Alaska. The Pacific walrus, which is the larger animal of the two, with considerably the longer tusks, always had a restricted range, and is now becoming very scarce. In European museums it appears to be represented only by skulls and tusks, and even these are rare. Formerly the Atlantic walrus occurred in countless thousands, but in accessible situations its numbers have been greatly reduced, owing to incessant persecution for the sake of its valuable oil and ivory. Between 1870 and 1880 at least 100,000 of these animals are estimated to have been slain.

The largest walrus ever shot by Mr. W. Livingstone Learmonth measured 12 feet 8 inches in length, and the tusks when extracted measured $25\frac{1}{2}$ inches in length and $8\frac{1}{2}$ in circumference at the largest part, but, as is the case with nearly all old bull walrus, the tusks were much broken at the points.

Tusks.

Total length of tusk.	Weight. lbs. oz.	Girth.	Locality.	Owner.
36	...	...	?	Sir Thos. Hesketh, Bart.
-33½ ¹	7 10½	8½	Kamchatka . .	G. E. H. Barrett-Hamilton.
32¾	...	8¾	?	Bethnal Green Museum.
-32	9 9	...	Pacific . . .	Norwich Museum.
-31	6 1	...	...	F. Gordon George.
30¾	...	9½	Kamchatka . .	Lieut. H. A. Gillett, R.N.
29	...	9¼	Arctic America .	C. C. Branch.
28¾	...	9¾	Do.	Do.
-25½	...	8½	Baffin Bay . .	W. Livingstone Learmonth.
...	Length from gum. 22½	7¾	Spitzbergen . .	Sir Edmund G. Loder, Bart.
...	20¾	7½	Do.	Sir Victor Brooke's Collection.
...	18½	7½	Do.	Arnold Pike.

¹ 25½ from gum.

NARWHAL (*Monodon monoceros*).

The Arctic narwhal is the only Cetacean furnished with tusks. These are present only in the male, and generally the left one alone is developed. Occasionally, however, both grow, as exemplified in a specimen in the British, and a second in the Cambridge Museum. A model of the animal is exhibited in the British Museum.

Distribution.—Arctic Seas.

Tusks.

Length.		Circumference.	Weight.	Owner.
ft.	in.		lbs.	
9	4½	7½	...	Major H. A. Steward.
8	8½	8½	...	Bethnal Green Museum.
8	7½	8¼	14	Rowland Ward.
8	7	8¼	15	Sir Edmund G. Loder, Bart.
8	3¼	7¾	...	Bethnal Green Museum.
8	3¼	7¾	...	Hon. Charles Ellis.
8	0	7¾	...	A. Barclay Walker.
7	11	...	...	J. H. Whitehouse.

HINTS FOR RECORDING THE LENGTH OF ANIMALS IN THE FIELD.

As the body lies on the ground, and where circumstances permit, proceed as follows :—

Length. Pull the nose and the tail so as to get them as nearly as possible in a straight line. Fix four pegs in, one at the end of nose, one at end of tail, one at root of tail, and the fourth at the nape of neck behind ears.

Height at shoulder. Put the leg or paw in a standing position and place a peg at top of withers and measure carefully standing height (a) with extended paw, (b) with spread paw, as well as length of fore and hind legs from pegs at the stomach-line.

The entries in the game-book should be as follows :—

A to F. Straight length from nose to tip of tail.

A to E. Length along curve to root of tail.

E to F. Length of tail.

A to B. Length of head to nape of neck.

N. Girth, upper arm.

M. „ fore-arm.

O. „ of body.

P. Girth of head.

D to G. Height at hind-quarters.

C to I. „ shoulder.

K to L. Length of fore-leg.

H to G. „ hind-leg.

Weight, cleaned.

„ not cleaned.

Cleaned skull (length, breadth, height, weight).

In addition to the above measurements, the sex, estimated age, date and locality, condition of the animal, with any other features of interest, such as colour of the eyes and skin, length of the hoofs, condition of teeth, should be mentioned.



Tiger shot by Major H. G. C. Swayne in the Central Provinces.

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